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Principal of the State Normal and Training School at Cortland,
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DEDICATED

To those teachers who desire to say with Pestalozzi, "My aim was to carry the simplifying of all means of teaching so far that every common man can easily bring himself to teach his children, and to make the school gradually superfluous for the first elements."

EXPLANATORY STATEMENT.

This system of primary arithmetic was introduced by me into public school No. 2, Binghamton, N. Y., in November, 1881, the public schools of the city being then under my supervision. The school-year consisted of forty weeks, extending from September 5, 1881, to June 30, 1882; the age of the pupils mentioned below was averaged at the date of opening the school-year. The second grade (second year in school) in school No. 2 comprised two classes (A^1 and A^2) which aggregated forty-two children, whose average age was 8.80 years. The first grade (first year in school) contained sixty-nine children, whom the school-system of the city ranked in three classes; the most advanced (A) class numbered twenty-two pupils, whose age averaged 7.82 years; the middle (B) class included sixteen pupils, whose average age was 6.69 years; and the lowest (C) class comprised thirty-one pupils,

—twelve boys and nineteen girls of average abilities — whose age averaged 5.63 years, September 5, 1881, the date when they first entered school; the other pupils in the first grade had attended school previous to this date. This system of elementary number was begun November 21 by the second grade, and December 6 by the pupils in the first grade.

Miss Mary Louise Roberts was principal of school No. 2, and Misses Emma Cordelia Mills, Nellie Stoppard Stuart, and Henrietta Roberts were her assistants. These teachers taught the subject orally; they kept daily for each of the five classes a journal wherein they entered in detail the work in arithmetic which the classes performed; they also recorded observations upon those marks of mental growth and development which characterized the acquirements of the pupils while they were prosecuting this subject according to the requisitions of the system. The entries in the journals constitute in substance the manual and the first-year and the second-year text-books of this series. The manual and first-year text-book contain only the work that the pupils of the lowest (C) class had actually performed at the close of the school-year, June 30, 1882. The second-year text-book does not contain an equivalent of the amount of work which the pupils of the second grade had performed at the close of the school-year; but it includes in its first pages the advanced work that had been done June 30, 1882, by the highest (A) class, in the first grade. The middle (B) class was incorporated the last of March, 1882, with the lowest (C) class as the work of these two classes had been the same for some time previous. The programme of school exercises for the (C) class provided daily during the year twenty minutes for reciting and twenty minutes for studying number in the forenoon, and twenty minutes for reciting it in the afternoon, thus assigning to arithmetic one hour per day, or five hours per week — three hours and twenty minutes for recitation, and one hour and forty minutes for study. The work accomplished by the C class during the year is particularized in the following pages by 175 lessons for as many school-days which cover thirty-five weeks of a school-year of forty weeks. This arrangement of work for the year allows to teachers five weeks for organizing classes at the opening of the year, for preliminary reviews at the beginning of terms, and for interruptions occasioned by holidays, the weather, sickness of pupils, and other influences which disturb the uniform progress of pupils.

Miss Mary L. Roberts and Miss Nellie S. Stuart transcribed from the journals the lessons which compose the manual and the text-books.

Miss Sarah A. Saunders, critic in the primary department of the Cortland Normal School, visited the school at Binghamton to inspect the development of the pupils who were pursuing the system, and assisted in supervising the work when it was preparing for the press.

J. H. HOOSE.

State Normal School, Cortland, N. Y.,
July 25, 1882.

INTRODUCTION.

This system of primary arithmetic is based upon some of those principles of education and of teaching which have been evolved by the school of educators who are known as Sense-Realists, a school which began with Bacon (1561–1626) and Ratke (or Ratich, 1571–1625), and has been reinforced powerfully by Pestalozzi (1746–1827) and many other educational reformers. The system purposes to educate pupils to the following attainments, to wit: To think intently, consecutively, persistently and accurately—a process which is made necessary and habitual to pupils by the forms in which the subject-matter of elementary arithmetic is set to them; (2) To express themselves in the forms of arithmetical language with certainty, promptitude and expertness—an attainment which those pupils acquire who recite intelligently in the form of answer which they are required to give to all the examples in the series, and who also, by making for themselves examples in concrete numbers, apply constantly computations of abstract numbers to transactions in business; (3) To inspire in pupils confidence in their own mental powers — a state of mind which accrues from a consciousness that they are able to do with exactness the tasks which are given to them; (4) To compute numbers mentally, readily and correctly—an acquirement which pupils gain by calculating daily, without slate or pencil, large numbers whose complex relations to each other are indicated only, thus obliging the pupils to give to the successive parts of an example more attention than they give to finding the answer; (5) To study subject-matter with as much patient application and aggressive energy when it is in printed pages as when it exists in any other form—a power which pupils attain by handling early in their school life a printed text as familiarly and as intelligently as they handle statements written upon the blackboard, objects, or oral language of teachers.

1. Teach only one thing of a kind at a time. —*Ratke.*

2. Often repeat the same thing.—*Ratke.*

3. Have uniformity in everything, as well in methods of teaching as in books and precepts.—*Ratke.*

4. First a thing in itself, and then the way of it. Matter before form. Rules without matter confuse the understanding.—*Ratke.*

5. The elementary means of instruction are speech, number, and form.—*Pestalozzi.*

6. A man wishes to do everything which he feels himself strong enough to do, and in virtue of this indwelling impulse he wills to do this.—*Pestalozzi.*

7. I wished to bring to perfection the smallest thing that the children learnt, to go back in nothing, so that they should never forget one word that they had learnt, or write badly one letter that they had written well.—*Pestalozzi.*

LESSON I.

Work for the recitation hour: The children are taught to count one splint and two splints, crayons, blocks, and children; they are taught to say, "one splint," "two splints," "one block," "two blocks," "one crayon," "two crayons," "one child" and "two children"; they are taught to make the figures 1 and 2 upon the blackboard and then upon slates; they select one object and two objects from a larger number of objects; and they are taught to make on the blackboard and on slates two simple drawings of a block, thus, ▭ ▭.

Work for the study hour: The children copy five times from the blackboard upon slates the figures 1 and 2, and the drawings.

LESSON II.

Work for the recitation hour: The children count "one," "two," "three" splints, crayons, blocks, and children; they make the figures 1, 2, and 3 upon the blackboard and slates; they select one, two, and three objects from a number of objects; they make three drawings of a block upon the blackboard and slates, thus, ▭ ▭ ▭.

Work for the study hour: The children copy from the blackboard upon slates the figures 1, 2, and 3; they make drawings of a block, indicating the number of them by writing a figure under the drawings, thus, ▭ ▭ ▭.
3

LESSON III.

Work for the recitation hour: The children count "one," "two," "three," and "four" splints, crayons, blocks, and children; they make the figures 1, 2, 3, and 4 upon the blackboard and slates; they select one, two, three, and four objects from a number of objects; they make upon the blackboard as many lines, not exceeding four, as the teacher indicates by showing objects; they make four drawings of a block, thus, ▭ ▭ ▭ ▭.

Work for the study hour: The children copy

from the blackboard the figures 1, 2, 3, and 4; they make drawings of a block, not exceeding four in a group, and indicate the number of drawings made by writing a figure under them, thus, ▭ ▭ ▭ ▭.
4

LESSON IV.

Work for the recitation hour: The children count "one," "two," "three," "four," and "five" splints, crayons, blocks, and children; they make the figures 1, 2, 3, 4, and 5 on the blackboard and slates; they select one, two, three, four, and five objects; they make as many lines, not exceeding five, as the teacher indicates by exhibiting objects; they select as many objects, not exceeding five, as the teacher indicates by lines upon the blackboard; they make five drawings of a block, thus, ▭ ▭ ▭ ▭ ▭.

Work for the Study Hour: The teacher puts upon the blackboard drawings of a block, not exceeding five in a group, and the children copy these drawings upon slates, placing figures under them to show the number in the group, as in the preceding lesson.

LESSON V.

Work for the Recitation Hour: The children count "one," "two," "three," "four," "five," and "six" splints, crayons, blocks, and children; they make the figures 1, 2, 3, 4, 5, and 6 on the blackboard and slates; they select one, two, three, four, five, or six objects from larger numbers of them; they make as many lines, not exceeding six, as the teacher indicates by exhibiting objects; they select as many objects, not exceeding six, as the teacher indicates by drawing lines upon the blackboard; they select as many objects, not exceeding six, as the teacher indicates by figures written upon the blackboard; they make six drawings of a block, thus, ▭ ▭ ▭ ▭ ▭ ▭.

Work for the Study Hour: The children copy from the blackboard upon slates the figures 1, 2, 3, 4, 5, and 6; they make drawings of a block, indicating the number of them in a group, by placing a figure under them, as in lesson III.

LESSON VI.

Work for the Recitation Hour: This lesson is a repetition of lesson V, with the following addition, to wit: The teacher directs a child to ask another child to bring a number of objects, not exceeding six, being careful to observe that the first child does not accept an incorrect number of objects from the second child.

Work for the Study Hour: The teacher makes upon the blackboard drawings of a block, not exceeding six in a group; the children copy the drawings on slates, indicating by figures placed under the drawings how many are in the group, as in lesson III.

LESSON VII.

Work for the Recitation Hour: The children count "one," "two," "three," "four," "five," "six," and "seven" splints, crayons, blocks, and children; they make the figures 1, 2, 3, 4, 5, 6, and 7 on the blackboard and slates; they select one, two, three, four, five, six, or seven objects from a collection of them. One child names a number of objects, under eight, for another child to select, the first child stating whether the number selected is correct. The teacher writes figures, from one to seven inclusive, upon the blackboard, and the pupils select the corresponding number of objects. The pupils make seven drawings of a block upon the blackboard and slates, thus, ▭ ▭ ▭ ▭ ▭ ▭ ▭.

Work for the Study Hour: The children copy from the blackboard the figures 1, 2, 3, 4, 5, 6, and 7; they make drawings of a block, indicating by figures, as in lesson III, the number in the group, which does not exceed seven.

LESSON VIII.

Work for the Recitation Hour: The children count "one," "two," "three," "four," "five," "six," "seven," and "eight" splints, crayons, blocks, and children; they make the figures 1, 2, 3, 4, 5, 6, 7, and 8; they select one, two, three, four, five, six, seven, or eight objects from a greater number of objects. One child names a number of objects for another child to select; one child writes upon the blackboard a figure for another child to select the number of objects indicated; one child makes upon the blackboard a number of lines not exceeding eight, and another child indicates this number by writing the corresponding figure upon the slate or blackboard. The pupils make eight drawings of a block; thus, ▭ ▭ ▭ ▭ ▭ ▭ ▭ ▭.

Work for the Study Hour: The children make on slates drawings of a block, not exceeding eight in any group, and make the figures which denote the number in the group, placing them under the drawings, as in lesson III.

LESSON IX.

Work for the Recitation Hour: The children count "one," "two," "three," "four," "five," "six," "seven," "eight," and "nine" splints, crayons, blocks, and children; they make the figures 1, 2, 3, 4, 5, 6, 7, 8, and 9; they select one, two, three, four, five, six, seven, eight, or nine objects. One child selects a number of objects, not exceeding nine, and makes the figure which indicates the number selected; one child makes upon the blackboard a number of lines, and then the figure that corresponds to that number; one child makes upon the blackboard a figure, and another child selects the corresponding number of objects. The pupils make nine drawings of a block; thus, ▭ ▭ ▭ ▭ ▭ ▭ ▭ ▭ ▭.

Work for the Study Hour: The teacher makes on the blackboard drawings of a block, not to exceed nine in a group. The children copy the drawings on slates, and under each group place the figure indicating the number in the group.

LESSON X.

Work for the Recitation Hour: The pupils count "one," "two," "three," "four," "five," "six," "seven," "eight," "nine," and "ten" splints, crayons, blocks, or children; they write in figures 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10; they select one, two, three, four, five, six, seven, eight, nine, or ten objects; they name the greater of two numbers, neither exceeding ten, but do not give the difference between the numbers; they make ten drawings of a block; thus, ▭ ▭ ▭ ▭ ▭ ▭ ▭ ▭ ▭ ▭.

Work for the Study Hour: The children copy from the blackboard 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10; they also make drawings of a block or of a book, not to exceed ten in a group, and indicate the number in each group, as in previous lessons.

LESSON XI.

Work for the Recitation Hour: The pupils count "one," "two," "three," "four," "five," "six," "seven," "eight," "nine," "ten," "eleven," and "twelve" objects; they write in figures the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12; they select any required number of objects, less than thirteen, from a greater number of objects. One child names numbers of objects for another child to select, while a third pupil indicates in figures upon the blackboard the numbers given by the first child. One child calls upon another to count a number of objects less than thirteen, and then to write in figures upon the blackboard the number of objects so counted.

Work for the Study Hour: The children make on slates all the numbers from one to twelve inclusive; the teacher makes drawings of a block in groups of 5, 3, 8, 10, 4, 6, 12, 9, 7, and 2; the children copy the drawings, and indicate the number in each row, thus:

□ □ □ □ □ 5
□ □ □ 3

LESSON XII.

Work for the Recitation Hour: The pupils count objects from "one" to "fourteen" inclusive, and express by figures all these numbers; they proceed in application and in drill according to the directions given in preceding lessons.

Work for the Study Hour: The children copy from the blackboard on slates all the numbers from one to fourteen inclusive, and make after each number as many drawings as are indicated by that number.

LESSON XIII.

Work for the Recitation Hour: The pupils count objects from "one" to "sixteen" inclusive, and write by figures all the numbers; they continue the drill in the forms prescribed in previous lessons.

Work for the Study Hour: The children repeat the work for the study hour of lesson XII.

LESSON XIV.

Work for the Recitation Hour: The pupils count objects from "one" to "eighteen" inclusive, and write in figures all these numbers; they continue the work according to instructions given in preceding lessons.

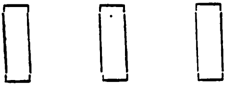
Work for the Study Hour: The teacher makes drawings of a large hat-pin, thus:

The children copy the drawings on slates, and indicate the number in each row, as in previous lessons.

LESSON XV.

Work for the Recitation Hour: The pupils count objects from "one" to "twenty" inclusive, and write in figures all these numbers; they review the work according to directions specified in previous lessons.

Work for the Study Hour: The teacher makes drawings of a splint, thus:



and 2; the children copy the drawings, and indicate the number in each row, thus:

□ □ □ □ □ 5
□ □ □ 3

LESSON XII.

Work for the Recitation Hour: The pupils count objects from "one" to "fourteen" inclusive, and express by figures all these numbers; they proceed in application and in drill according to the directions given in preceding lessons.

Work for the Study Hour: The children copy from the blackboard on slates all the numbers from one to fourteen inclusive, and make after each number as many drawings as are indicated by that number.

LESSON XIII.

Work for the Recitation Hour: The pupils count objects from "one" to "sixteen" inclusive, and write by figures all the numbers; they continue the drill in the forms prescribed in previous lessons.

Work for the Study Hour: The children repeat the work for the study hour of lesson XII.

LESSON XIV.

Work for the Recitation Hour: The pupils count objects from "one" to "eighteen" inclusive, and write in figures all these numbers; they continue the work according to instructions given in preceding lessons.

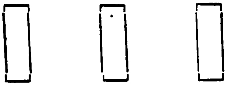
Work for the Study Hour: The teacher makes drawings of a large hat-pin, thus:

The children copy the drawings on slates, and indicate the number in each row, as in previous lessons.

LESSON XV.

Work for the Recitation Hour: The pupils count objects from "one" to "twenty" inclusive, and write in figures all these numbers; they review the work according to directions specified in previous lessons.

Work for the Study Hour: The teacher makes drawings of a splint, thus:



The children copy on the slates the drawings, and indicate the number in each row, as in previous lessons.

LESSON XVI.

Work for the Recitation Hour: Ordinal numbers from "first" to "twentieth" inclusive. The pupils begin the lesson by counting objects as heretofore, saying "one," "two," "three," etc., etc., to "twenty" inclusive; then they number the same objects, saying "first," "second," "third," etc., etc., to "twentieth" inclusive.

Work for the Study Hour: The children copy from the blackboard on slates all the numbers from one to twenty inclusive. The children count and indicate on slates the number of splints in bundles given to them by the teacher.

LESSON XVII.

Work for the Recitation Hour: The pupils review lesson XVI; they also review the subject-matter of all the preceding lessons.

Work for the Study Hour: The teacher provides work for this study hour according to the needs of the pupils.

LESSON XVIII.

Work for the Recitation Hour: *First Stage:* The teacher holds up one splint in her right hand, and says to the pupils, "How many splints have I?" The children answer, "One splint." The teacher asks, "How many times one splint have I?" The children answer, "One time one splint." The teacher takes a splint in her left hand, retaining the first splint in her right hand, and asks the pupils, "How many splints have I in this hand?" The pupils answer, "One splint." The teacher asks, "How many times one splint have I in this hand?" The pupils answer, "One time one splint." The teacher asks, "One time one splint and one time one splint are how many times one splint?" and then puts together the two splints which she holds in her hands. The pupils answer in full, "One time one splint and one time one splint are two times one splint." Each pupil in turn takes one splint in each hand and says, "One time one splint and one time one splint are two times one splint," bringing together the two splints while uttering the words.

Second Stage: The teacher takes two splints in one of her hands, and one splint in the other. She then says to the class, "Two times one splint and one time one splint are how many times one splint?" and puts together the three splints. A pupil takes from the teacher the splints, two in one hand and one in the other, and says, "Two times one splint and one time one splint are three times one splint," putting them together in one group.

Third Stage: The teacher asks the pupils, "One time one splint and two times one splint are how many times one splint?" The children take the splints as before and say, "One time one splint and two times one splint are three times one splint," putting the splints together.

Fourth Stage: The teacher asks the class, "Three times one splint and one time one splint are how many times one splint?" A child takes the splints, three in one hand and one in the other, and answers, "Three times one splint and one time one splint are four times one splint," putting the splints together.

Work for the Study Hour: The teacher provides work as for the study hour of lesson XVII.

LESSON XIX.

Work for the Recitation Hour: *First Stage:* Review thoroughly lesson XVIII.

Second Stage: The teacher asks the following questions: "Four times one splint and one time one splint are how many times one splint?" "Two times one splint and two times one splint are how many times one splint?" "One time one splint and three times one splint are how many times one splint?" The children take the splints and proceed with them as they did in lesson XVIII, giving the answer in full to each question.

Work for the Study Hour: Repeat the work assigned in the study hour of lesson XVI.

LESSON XX.

General Notes. I. In this lesson some of the arithmetical signs are introduced. The children may be taught to call the sign + either "and" or "plus;" the sign = "are" (or "is"), "equal" (or "equals"), or "or"; and the sign – "minus" or "less." But whichever of these forms is adopted by the teacher at first, it should be continued throughout the book.

II. Numbers connected by the signs + and – are to be taken separately, except when aggregated by a vinculum. The signs × and ÷ aggregate by definition the numbers connected by them, but no others. Thus, 3 × 2 + 4 × 6 =, means that 3 × 2 (6) is to be added to 4 × 6 (24), aggregating 30. [See Perkins's Higher Arithmetic, art. 13, p. 14; Olney's Science of Arith., art. 55, p. 18; Newcomb's Algebra, art. 42, pp. 17; Robinson's University Algebra, art. 17, p. 13; Encyclopædia Britannica.

WORK FOR THE RECITATION HOUR: *First Stage:* Review thoroughly the subject-matter of lessons XVIII and XIX.

Second Stage: The teacher says to the class, "One time one and one time one are how many times one?" The pupils answer, "One time one and one time one are two times one." The teacher says, "I will show you how to write what you have said," and writes 1 × 1 + 1 × 1 = 2×1 on the blackboard. The pupils copy this form of their answer upon slates and upon the blackboard. The teacher tells the children that × is called "times"; that + is called "and"; and that = is called "are"; she then requests the pupils to point to these signs severally as they stand upon the slates and blackboard; the pupils make the signs as the teacher dictates them; the children read the example as it stands on the blackboard, pointing to each figure and sign as it is read.

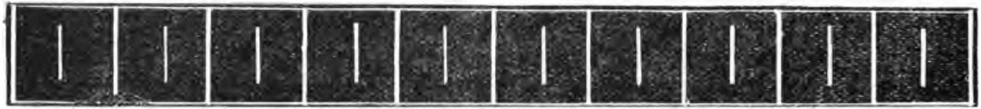
The teacher writes the example, 2 × 1 + 1 × 1 =, which the pupils read, giving the answer (3 × 1) for the teacher to write in its proper place.

The teacher and pupils proceed with the example, 1 × 1 + 1 × 1 =, in a similar manner.

Work for the Study Hour: The children count and indicate by drawings and figures the numbers of splints in a bundle given to them by the teacher; they make the numbers from 1 to 20 inclusive from copies first, and then from memory.

ARITHMETICAL CHART.

Figure 1. The 1s.



Note: The teacher will make this chart upon the blackboard. The size of the squares should be so large that pupils can read easily the figures in them—one foot square being proper dimensions for each of the ten squares in the row. In case there is insufficient blackboard surface, the chart can be made upon strips of muslin or paper (as the unfigured side of wall-paper) and held by tacks against the walls of the school-room. Colored crayons or inks will be found advantageous in making the chart.

Directions: Pupils point in succession to the numbers while they are answering examples. Suppose the question is, "Four times one and two times one are how many times one?" A pupil points rapidly and silently to the first four 1s, beginning at the left side of the chart; with the pointer resting after the fourth 1, he says "Four times 1," and then moves the pointer over two more 1s, saying, "and two times one are six times one." This form is to be observed throughout the year, substituting 2s, 3s, etc., according to the chart used.

LESSON XXI.

General Notes. III. Every pupil gives always the full form of the answer to each example, although he never repeats the example when it is in concrete numbers; this practice is kept up without cessation throughout this series of arithmetics, whether the teacher dictates the example, writes it upon the blackboard, or requires the pupil to give it from the chart or read it from the book. Pupils are to gain mental power by using intelligently the forms of arithmetical language as well as by handling the subject-matter of arithmetic.

IV. Throughout the year the teacher begins each and every recitation with a brief and rapid review of the subject-matter which the pupils have passed over in the lessons that they have had since they began the subject, a course which dispenses with stated and formal reviews.

V. Immediately after completing the preliminary review the teacher presents to pupils in a minimum number of words and moments of time the new subject-matter of the lesson, observing that pupils experience greater difficulty in learning some forms (as 1 × 2) than others (as 2 × 1).

VI. Pupils refer constantly to the chart or to objects to illustrate their understanding of the examples. This test is continued to the end of the series.

VII. Pupils seldom count their fingers to aid them when reckoning numbers unless they are taught to do it; if they resort to the practice teachers will prohibit it.

VIII. Pupils, when suffering from illness or mental weariness, must not be asked to perform difficult computation.

IX. The teacher is careful first of all to keep pupils free from physical (nervous) and mental restlessness in recitation. Pupils are to be in a state of tranquillity and attention, but not dullness, in order to think consecutively and accurately, being allowed ample time to make the computations which are expected of them; they are not to be molested in any manner by the teacher when they are thinking intently; they are not to be stimulated to over-exertion in rapidity or duration of an intellectual action, although they are to be incited by the requirements of the subject-matter of each lesson to put forth the maximum of their mental power at some point of every recitation, not being held in this mental tension an undue length of time. The cardinal virtue in calculating numbers is accuracy the first time an answer is attempted, and the supreme vice is a guess at the answer. Power to think intently, steadily, correctly and with cumulative energy, is far superior to mere power to be rapid in mental movements. Recitations are made by individual pupils, never in concert.

X. Throughout this series of primary arithmetics the pupils learn only processes and forms; they do not learn to analyze them, nor do they learn definitions; they learn to perform operations but not to explain or define them, these things being postponed to subsequent years; they invent their own ways of calculating numbers, the teacher making not even a suggestion of "units," or "ones," or "tens," or "carrying," or of any other term which belongs to the formulas of arithmetical definitions and explanations. If pupils are called upon occasionally to narrate the process by which they reckon large numbers, it will be found that each one follows his own plan of separating the numbers into parts and adding, some by twos, some by eights some by tens, some by twenties, some by fifties; some progress steadily forward up to the sum; others obtain sums which are too great, and then diminish them; others apparently add the numbers as wholes. Pupils learn incidentally that "so many times 1" is the number itself; as, 3 × 1 = 3.

WORK FOR THE RECITATION HOUR: *First stage:* Review thoroughly lesson XX. *Second stage:* The teacher writes upon the blackboard the following examples; the pupils read each example and give the answer which the teacher writes in its proper place. The pupils are drilled upon reading the several signs. The form to be used by the teacher when asking the question for example 2 below is, “Three times 1 and one time 1 are how many times 1?” The form of answer required of pupils is “Three times 1 and one time 1 are four times 1.” (See lesson XIX.)

1. $1 \times 1 + 2 \times 1 = 3 \times 1$
2. $3 \times 1 + 1 \times 1 =$
3. $4 \times 1 + 1 \times 1 =$
4. $2 \times 1 + 2 \times 1 =$
5. $1 \times 1 + 3 \times 1 =$
6. $3 \times 1 + 2 \times 1 =$

Work for the Study Hour: The teacher writes on the blackboard the following examples:

1. $1 \times 1 + 2 \times 1 =$
2. $3 \times 1 + 1 \times 1 =$
3. $4 \times 1 + 1 \times 1 =$
4. $2 \times 1 + 1 \times 1 =$
5. $1 \times 1 + 3 \times 1 =$
6. $2 \times 1 + 2 \times 1 =$

The children copy these examples on slates, writing the answer after each one; thus,

$$1 \times 1 + 2 \times 1 = 3 \times 1$$

LESSON XXII.

General Note. XI. In this lesson, and

through the book, the pupils perform the examples set to them in the lesson; then they repeat the same examples, if time permits, although they are given to them in a different order.

Work for the Recitation Hour: Form of answer required of the pupil: "Five times 1 and one time 1 are 6 times 1."

1. $5\times1+1\times1=6\times1$
2. $8\times1+1\times1=$
3. $6\times1+1\times1=$
4. $1\times1+4\times1=$
5. $7\times1+2\times1=$
6. $1\times1+6\times1=$
7. $9\times1+1\times1=$
8. $1\times1+8\times1=$
9. $4\times1+1\times1=$
10. $1\times1+5\times1=$
11. $1\times1+7\times1=$
12. $1\times1+1\times1=$

Work for the Study Hour: The teacher writes on the blackboard the following examples:

1. $3\times1+1\times1=$
2. $5\times1+1\times1=$
3. $4\times1+1\times1=$
4. $8\times1+1\times1=$
5. $1\times1+2\times1=$
6. $6\times1+1\times1=$
7. $2\times1+2\times1=$
8. $2\times1+4\times1=$

The children copy and write the answers as indicated in lesson XXI.

LESSON XXIII.

Work for the Recitation Hour: Form of pupil's answer: "Three times 1 and two times 1 are five times 1."

1. $3\times1+2\times1=5\times1$
2. $2\times1+3\times1=$
3. $11\times1+1\times1=$
4. $8\times1+1\times1=$
5. $9\times1+1\times1=$
6. $7\times1+1\times1=$
7. $2\times1+2\times1=$
8. $1\times1+10\times1=$
9. $12\times1+1\times1=$
10. $3\times1+3\times1=$

Work for the Study Hour: The children copy and write the answers to the following examples:

1. $7\times1+1\times1=$
2. $1\times1+3\times1=$
3. $1\times1+6\times1=$
4. $2\times1+2\times1=$
5. $9\times1+1\times1=$
6. $1\times1+8\times1=$
7. $1\times1+5\times1=$
8. $4\times1+1\times1=$

LESSON XXIV.

Work for the Recitation Hour: Form of answer by the pupil: "Four times 1 and two times 1 are six times 1."

1. $4\times1+2\times1=6\times1$
2. $2\times1+4\times1=$
3. $3\times1+2\times1=$
4. $2\times1+2\times1=$
5. $8\times1+1\times1=$
6. $2\times1+3\times1=$
7. $12\times1+1\times1=$
8. $1\times1+11\times1=$
9. $9\times1+1\times1=$
10. $3\times1+3\times1=$
11. $1\times1+12\times1=$
12. $3\times1+3\times1=$

Work for the Study Hour: The children copy from the blackboard and write the answers to the following examples:

1. $1\times1+7\times1=$
2. $9\times1+1\times1=$
3. $3\times1+2\times1=$
4. $2\times1+2\times1=$
5. $2\times1+3\times1=$
6. $11\times1+1\times1=$
7. $8\times1+1\times1=$
8. $7\times1+1\times1=$
9. $12\times1+1\times1=$
10. $3\times1+3\times1=$

LESSON XXV.

Work for the Recitation Hour: Form of answer: "Two times 1 and two times 1 are four times 1."

1. $2\times1+2\times1=4\times1$
2. $8\times1+1\times1=$
3. $1\times1+6\times1=$
4. $3\times1+2\times1=$
5. $1\times1+13\times1=$
6. $3\times1+3\times1=$
7. $14\times1+1\times1=$
8. $9\times1+1\times1=$
9. $2\times1+4\times1=$
10. $1\times1+14\times1=$
11. $11\times1+1\times1=$
12. $3\times1+1\times1=$
13. $1\times1+12\times1=$
14. $1\times1+8\times1=$

Work for the Study Hour:

1. $2\times1+3\times1=$
2. $4\times1+2\times1=$
3. $2\times1+4\times1=$
4. $3\times1+2\times1=$
5. $8\times1+1\times1=$
6. $12\times1+1\times1=$
7. $2\times1+4\times1=$
8. $13\times1+1\times1=$
9. $2\times1+3\times1=$
10. $2\times1+2\times1=$

LESSON XXVI.

Work for the Recitation Hour: Form of answer: "Two times 1 and two times 1 are four times 1."

1. $2\times1+2\times1=4\times1$
2. $8\times1+1\times1=$
3. $1\times1+6\times1=$
4. $3\times1+2\times1=$
5. $1\times1+13\times1=$
6. $3\times1+3\times1=$
7. $14\times1+1\times1=$
8. $2\times1+3\times1=$
9. $4\times1+2\times1=$
10. $10\times1+1\times1=$
11. $9\times1+1\times1=$
12. $2\times1+4\times1=$
13. $1\times1+14\times1=$
14. $11\times1+1\times1=$
15. $3\times1+1\times1=$
16. $1\times1+12\times1=$
17. $1\times1+8\times1=$
18. $10\times1+1\times1=$
19. $1\times1+7\times1=$
20. $12\times1+1\times1=$

Work for the Study Hour:

1. $2\times1+2\times1=$
2. $3\times1+2\times1=$
3. $3\times1+3\times1=$
4. $2\times1+4\times1=$
5. $4\times1+2\times1=$
6. $10\times1+1\times1=$
7. $14\times1+1\times1=$
8. $1\times1+13\times1=$
9. $11\times1+1\times1=$
10. $12\times1+1\times1=$

LESSON XXVII.

Work for the Recitation Hour: Form of answer: "Three times 1 and two times 1 are five times 1."

1. $3\times1+2\times1=5\times1$
2. $2\times1+2\times1=$
3. $1\times1+15\times1=$
4. $18\times1+1\times1=$
5. $7\times1+1\times1=$
6. $2\times1+4\times1=$
7. $9\times1+1\times1=$
8. $3\times1+1\times1=$
9. $2\times1+2\times1=$
10. $1\times1+14\times1=$
11. $4\times1+2\times1=$
12. $1\times1+9\times1=$
13. $11\times1+1\times1=$
14. $1\times1+15\times1=$
15. $1\times1+15\times1=$
16. $16\times1+1\times1=$
17. $15\times1+1\times1=$
18. $1\times1+4\times1=$
19. $14\times1+1\times1=$
20. $3\times1+3\times1=$

Work for the Study Hour:

1. $2\times1+2\times1=$
2. $3\times1+2\times1=$
3. $3\times1+3\times1=$
4. $2\times1+4\times1=$
5. $4\times1+2\times1=$
6. $10\times1+1\times1=$
7. $14\times1+1\times1=$
8. $1\times1+13\times1=$
9. $11\times1+1\times1=$
10. $12\times1+1\times1=$

LESSON XXVIII.

Work for the Recitation Hour: Form of answer: "Three times 1 and three times 1 are six times 1."

1. $3\times1+3\times1=6\times1$
2. $8\times1+1\times1=$
3. $1\times1+7\times1=$
4. $5\times1+1\times1=$
5. $15\times1+1\times1=$
6. $7\times1+1\times1=$
7. $4\times1+2\times1=$
8. $6\times1+1\times1=$
9. $2\times1+2\times1=$
10. $18\times1+1\times1=$
11. $3\times1+2\times1=$
12. $1\times1+16\times1=$
13. $2\times1+3\times1=$
14. $9\times1+1\times1=$
15. $2\times1+4\times1=$
16. $1\times1+19\times1=$
17. $17\times1+1\times1=$
18. $1\times1+18\times1=$

Work for the Study Hour:

1. $3\times1+2\times1=$
2. $2\times1+2\times1=$
3. $2\times1+3\times1=$
4. $4\times1+2\times1=$
5. $3\times1+3\times1=$
6. $18\times1+1\times1=$
7. $11\times1+1\times1=$
8. $16\times1+1\times1=$
9. $14\times1+1\times1=$
10. $15\times1+1\times1=$

LESSON XXIX.

Work for the Recitation Hour: Form of answer: "Four times 1 and three times 1 are seven times 1."

1. $4\times1+3\times1=7\times1$
2. $3\times1+4\times1=$
3. $9\times1+1\times1=$
4. $1\times1+8\times1=$
5. $3\times1+3\times1=$
6. $12\times1+1\times1=$
7. $1\times1+16\times1=$
8. $2\times1+3\times1=$

9. $1\times1+19\times1=$
10. $17\times1+1\times1=$
11. $3\times1+3\times1=$
12. $11\times1+1\times1=$
13. $1\times1+7\times1=$
14. $2\times1+4\times1=$
15. $14\times1+1\times1=$
16. $1\times1+10\times1=$
17. $4\times1+2\times1=$
18. $5\times1+1\times1=$

Work for the Study Hour:

1. $8\times1+1\times1=$
2. $1\times1+7\times1=$
3. $5\times1+1\times1=$
4. $7\times1+1\times1=$
5. $6\times1+1\times1=$
6. $9\times1+1\times1=$
7. $3\times1+3\times1=$
8. $4\times1+2\times1=$
9. $2\times1+2\times1=$
10. $3\times1+2\times1=$

LESSON XXX.

Work for the Recitation Hour: Form of answer: "Five times 1 and two times 1 are seven times 1."

1. $5\times1+2\times1=7\times1$
2. $2\times1+5\times1=$
3. $8\times1+1\times1=$
4. $3\times1+3\times1=$
5. $2\times1+3\times1=$
6. $11\times1+1\times1=$
7. $1\times1+16\times1=$
8. $4\times1+2\times1=$
9. $10\times1+1\times1=$
10. $2\times1+2\times1=$
11. $1\times1+9\times1=$
12. $2\times1+4\times1=$
13. $17\times1+1\times1=$
14. $3\times1+4\times1=$

15. $1\times1+13\times1=$
16. $4\times1+3\times1=$
17. $3\times1+2\times1=$
18. $15\times1+1\times1=$
19. $1\times1+11\times1=$
20. $13\times1+1\times1=$

Work for the Study Hour:

1. $4\times1+3\times1=$
2. $12\times1+1\times1=$
3. $3\times1+4\times1=$
4. $2\times1+3\times1=$
5. $3\times1+3\times1=$
6. $2\times1+4\times1=$
7. $5\times1+1\times1=$
8. $4\times1+2\times1=$
9. $1\times1+7\times1=$
10. $1\times1+19\times1=$

LESSON XXXI.

Work for the Recitation Hour: Form of answer: "One time 1 and eleven times 1 are twelve times 1."

1. $1\times1+11\times1=12\times1$
2. $6\times1+1\times1=$
3. $1\times1+8\times1=$
4. $4\times1+3\times1=$
5. $2\times1+2\times1=$
6. $18\times1+1\times1=$
7. $2\times1+5\times1=$
8. $3\times1+2\times1=$
9. $5\times1+1\times1=$
10. $1\times1+17\times1=$
11. $4\times1+2\times1=$
12. $2\times1+3\times1=$
13. $15\times1+1\times1=$
14. $1\times1+10\times1=$
15. $2\times1+4\times1=$
16. $5\times1+1\times1=$
17. $7\times1+1\times1=$
18. $1\times1+18\times1=$
19. $1\times1+12\times1=$
20. $3\times1+3\times1=$

Work for the Study Hour:

1. $5\times1+2\times1=$
2. $8\times1+1\times1=$
3. $2\times1+5\times1=$
4. $2\times1+3\times1=$
5. $4\times1+2\times1=$
6. $2\times1+2\times1=$
7. $3\times1+3\times1=$
8. $3\times1+2\times1=$
9. $4\times1+3\times1=$
10. $15\times1+1\times1=$

LESSON XXXII.

Work for the Recitation Hour: Form of answer: "One time 1 and eighteen times 1 are nineteen times 1."

1. $1\times1+18\times1=19\times1$
2. $3\times1+2\times1=$
3. $5\times1+2\times1=$
4. $2\times1+4\times1=$
5. $16\times1+1\times1=$
6. $3\times1+3\times1=$
7. $2\times1+2\times1=$
8. $1\times1+17\times1=$
9. $3\times1+4\times1=$
10. $9\times1+1\times1=$
11. $4\times1+3\times1=$
12. $17\times1+1\times1=$

Work for the Study Hour:

1. $3\times1+3\times1=$
2. $11\times1+1\times1=$
3. $1\times1+16\times1=$
4. $10\times1+1\times1=$
5. $1\times1+9\times1=$
6. $17\times1+1\times1=$
7. $5\times1+1\times1=$
8. $3\times1+2\times1=$
9. $3\times1+4\times1=$
10. $13\times1+1\times1=$

LESSON XXXIII.

Work for the Recitation Hour: Form of answer: "Three times 1 and five times 1 are eight times 1."

1. $3\times1+5\times1=8\times1$
2. $5\times1+3\times1=$
3. $4\times1+2\times1=$
4. $3\times1+4\times1=$
5. $2\times1+2\times1=$
6. $5\times1+2\times1=$
7. $16\times1+1\times1=$
8. $11\times1+1\times1=$
9. $1\times1+9\times1=$
10. $2\times1+5\times1=$
11. $1\times1+17\times1=$
12. $3\times1+3\times1=$
13. $2\times1+4\times1=$
14. $10\times1+1\times1=$

Work for the Study Hour:

1. $2\times1+5\times1=$
2. $3\times1+2\times1=$
3. $4\times1+2\times1=$
4. $5\times1+2\times1=$
5. $3\times1+3\times1=$
6. $7\times1+1\times1=$
7. $5\times1+1\times1=$
8. $4\times1+3\times1=$
9. $6\times1+1\times1=$
10. $18\times1+1\times1=$

LESSON XXXIV.

Work for the Recitation Hour: Form of answer: "Four times 1 and four times 1 are eight times 1."

1. $4\times1+4\times1=8\times1$
2. $2\times1+2\times1=$
3. $3\times1+4\times1=$
4. $7\times1+1\times1=$
5. $3\times1+5\times1=$
6. $14\times1+1\times1=$
7. $5\times1+2\times1=$
8. $2\times1+3\times1=$
9. $3\times1+4\times1=$
10. $11\times1+1\times1=$
11. $2\times1+5\times1=$
12. $5\times1+3\times1=$

Work for the Study Hour:

1. $3\times1+2\times1=$
2. $5\times1+2\times1=$
3. $2\times1+4\times1=$
4. $3\times1+2\times1=$
5. $2\times1+2\times1=$
6. $4\times1+3\times1=$
7. $9\times1+1\times1=$
8. $17\times1+1\times1=$
9. $16\times1+1\times1=$
10. $1\times1+18\times1=$

LESSON XXXV.

Work for the Recitation Hour: Form of answer: "Six times 1 and two times 1 are eight times 1."

1. $6\times1+2\times1=8\times1$
2. $2\times1+6\times1=$
3. $11\times1+1\times1=$
4. $3\times1+4\times1=$
5. $2\times1+2\times1=$
6. $5\times1+3\times1=$
7. $3\times1+2\times1=$
8. $1\times1+16\times1=$
9. $18\times1+1\times1=$
10. $1\times1+9\times1=$
11. $4\times1+3\times1=$
12. $2\times1+6\times1=$
13. $3\times1+3\times1=$
14. $2\times1+3\times1=$
15. $4\times1+4\times1=$
16. $2\times1+4\times1=$

WORK FOR THE STUDY HOUR:

1. $3\times1+5\times1=$
2. $4\times1+2\times1=$
3. $3\times1+4\times1=$
4. $5\times1+3\times1=$
5. $5\times1+2\times1=$
6. $3\times1+3\times1=$
7. $2\times1+3\times1=$
8. $2\times1+5\times1=$
9. $2\times1+4\times1=$
10. $11\times1+1\times1=$

LESSON XXXVI.

WORK FOR THE RECITATION HOUR: Form of answer: "Four times 1 and three times 1 are seven times 1."

1. $4\times1+3\times1=$
2. $19\times1+1\times1=$
3. $6\times1+2\times1=$
4. $3\times1+4\times1=$
5. $4\times1+4\times1=$
6. $1\times1+12\times1=$
7. $5\times1+3\times1=$
8. $3\times1+3\times1=$
9. $9\times1+1\times1=$
10. $3\times1+5\times1=$
11. $12\times1+1\times1=$
12. $2\times1+3\times1=$
13. $5\times1+2\times1=$
14. $2\times1+6\times1=$

I = 1 II = III =

WORK FOR THE STUDY HOUR:

1. $4\times1+4\times1=$
2. $2\times1+2\times1=$
3. $3\times1+4\times1=$
4. $3\times1+5\times1=$
5. $5\times1+2\times1=$
6. $14\times1+1\times1=$
7. $11\times1+1\times1=$
8. $5\times1+3\times1=$
9. $2\times1+3\times1=$
10. $17\times1+1\times1=$

LESSON XXXVII.

Work for the Recitation Hour: Form of answer: "Five times 1 and four times 1 are nine times 1."

1. $5\times1+4\times1=9\times1$
2. $4\times1+5\times1=$
3. $3\times1+4\times1=$
4. $2\times1+3\times1=$
5. $3\times1+5\times1=$
6. $5\times1+2\times1=$
7. $8\times1+1\times1=$
8. $4\times1+4\times1=$
9. $2\times1+5\times1=$
10. $5\times1+3\times1=$
11. $3\times1+3\times1=$
12. $4\times1+3\times1=$
13. $2\times1+4\times1=$
14. $11\times1+1\times1=$

IV = 4 V =

Work for the Study Hour: The children write on slates numbers from one to twenty inclusive; they also copy the following examples, and write the answers to them:

1. $6\times1+2\times1=$
2. $3\times1+4\times1=$
3. $5\times1+3\times1=$
4. $2\times1+6\times1=$
5. $3\times1+2\times1=$
6. $4\times1+3\times1=$
7. $4\times1+3\times1=$
8. $2\times1+4\times1=$
9. $3\times1+5\times1=$
10. $18\times1+1\times1=$

LESSON XXXVIII.

Work for the Recitation Hour: Form of answer: "Thirteen times 1 and 1 time 1 are fourteen times 1."

1. $13\times1+1\times1=14\times1$
2. $2\times1+6\times1=$
3. $3\times1+4\times1=$
4. $7\times1+1\times1=$
5. $5\times1+4\times1=$
6. $2\times1+3\times1=$
7. $4\times1+4\times1=$
8. $4\times1+3\times1=$
9. $2\times1+6\times1=$
10. $2\times1+5\times1=$
11. $2\times1+5\times1=$
12. $4\times1+5\times1=$
13. $3\times1+2\times1=$
14. $18\times1+1\times1=$
15. $1\times1+9\times1=$
16. $6\times1+2\times1=$
17. $3\times1+3\times1=$
18. $13\times1+1\times1=$

IV = 4 II = V =

I = III =

Work for the Study Hour:

1. $19\times1+1\times1=$
2. $12\times1+1\times1=$
3. $3\times1+4\times1=$
4. $1\times1+12\times1=$
5. $4\times1+3\times1=$
6. $5\times1+3\times1=$
7. $6\times1+2\times1=$
8. $2\times1+3\times1=$
9. $2\times1+4\times1=$
10. $11\times1+1\times1=$

The children make twenty drawings of a pin.

LESSON XXXIX.

Work for the Recitation Hour: Form of answer: "Six times 1 and three times 1 are nine times 1."

1. $6\times1+3\times1=9\times1$
2. $3\times1+6\times1=$
3. $5\times1+2\times1=$
4. $10\times1+1\times1=$
5. $4\times1+5\times1=$
6. $3\times1+2\times1=$
7. $7\times1+1\times1=$
8. $2\times1+5\times1=$
9. $3\times1+3\times1=$
10. $16\times1+1\times1=$
11. $1\times1+10\times1=$
12. $5\times1+4\times1=$
13. $2\times1+3\times1=$
14. $1\times1+8\times1=$
15. $5\times1+2\times1=$
16. $4\times1+4\times1=$
17. $2\times1+6\times1=$
18. $3\times1+5\times1=$
19. $1\times1+16\times1=$
20. $8\times1+1\times1=$
21. $2\times1+6\times1=$
22. $5\times1+3\times1=$
23. $4\times1+3\times1=$
24. $3\times1+3\times1=$

5 = V   2 =   4 =   3 =   1 =

Work for the Study Hour:

1. $13\times1+1\times1=$
2. $7\times1+1\times1=$
3. $4\times1+4\times1=$
4. $5\times1+1\times1=$
5. $3\times1+4\times1=$
6. $2\times1+4\times1=$
7. $4\times1+4\times1=$
8. $2\times1+6\times1=$
9. $9\times1+1\times1=$
10. $18\times1+1\times1=$

5 = V   1 =   II =   III =

LESSON XL.

Work for the Recitation Hour: Form of answer: "Seven times 1 and two times 1 are nine times 1."

1. $7\times1+2\times1=9\times1$
2. $2\times1+7\times1=$
3. $3\times1+5\times1=$
4. $4\times1+3\times1=$
5. $5\times1+4\times1=$
6. $2\times1+5\times1=$
7. $16\times1+1\times1=$
8. $3\times1+2\times1=$
9. $4\times1+4\times1=$
10. $3\times1+4\times1=$
11. $5\times1+2\times1=$
12. $6\times1+3\times1=$

V = 5

13. $18\times1+1\times1=$
14. $3\times1+6\times1=$
15. $4\times1+2\times1=$
16. $4\times1+5\times1=$
17. $2\times1+6\times1=$
18. $4\times1+4\times1=$
19. $2\times1+5\times1=$
20. $1\times1+1\times1=$
21. $2\times1+3\times1=$
22. $7\times1+2\times1=$
23. $16\times1+1\times1=$
24. $1\times1+18\times1=$

VI =

Work for the Study Hour:

1. $6\times1+3\times1=$
2. $10\times1+1\times1=$
3. $3\times1+1\times1=$
4. $4\times1+5\times1=$
5. $2\times1+5\times1=$
6. $4\times1+4\times1=$
7. $3\times1+3\times1=$
8. $2\times1+2\times1=$
9. $4\times1+3\times1=$
10. $2\times1+6\times1=$

IV = 4 II = V = I =

LESSON XLI.

Work for the Recitation Hour: Form of answer: "Eight times 1 and two times 1 are ten times 1."

1. $8\times1+2\times1=10\times1$
2. $2\times1+8\times1=$
3. $5\times1+5\times1=$
4. $4\times1+5\times1=$
5. $3\times1+4\times1=$
6. $2\times1+3\times1=$
7. $6\times1+3\times1=$
8. $4\times1+4\times1=$
9. $3\times1+5\times1=$
10. $7\times1+2\times1=$
11. $11\times1+1\times1=$
12. $8\times1+1\times1=$
13. $4\times1+4\times1=$
14. $7\times1+1\times1=$
15. $16\times1+1\times1=$
16. $1\times1+15\times1=$
17. $5\times1+4\times1=$
18. $4\times1+3\times1=$
19. $3\times1+2\times1=$
20. $3\times1+6\times1=$
21. $5\times1+5\times1=$
22. $5\times1+3\times1=$
23. $2\times1+7\times1=$
24. $1\times1+11\times1=$
25. $8\times1+1\times1=$
26. $2\times1+2\times1=$

6 = VI
2 =
4 =
1 =
5 =
3 =

Work for the Study Hour:

5 =
4 =
III =
2 =
1 =
V =

1. $7\times1+1\times1=$
2. $3\times1+5\times1=$
3. $4\times1+5\times1=$
4. $4\times1+4\times1=$
5. $7\times1+1\times1=$
6. $3\times1+6\times1=$
7. $5\times1+5\times1=$
8. $2\times1+7\times1=$
9. $2\times1+2\times1=$
10. $1\times1+15\times1=$

LESSON XLII.

Work for the Recitation Hour: Form of answer: "Seven times 1 and three times 1 are ten times 1."

1. $7\times1+3\times1=10\times1$
2. $3\times1+7\times1=$
3. $11\times1+1\times1=$
4. $5\times1+4\times1=$
5. $3\times1+6\times1=$
6. $7\times1+2\times1=$
7. $5\times1+3\times1=$
8. $3\times1+4\times1=$
9. $1\times1+18\times1=$
10. $8\times1+2\times1=$
11. $2\times1+5\times1=$
12. $1\times1+18\times1=$
13. $9\times1+1\times1=$
14. $4\times1+5\times1=$
15. $6\times1+3\times1=$
16. $2\times1+7\times1=$
17. $3\times1+5\times1=$
18. $4\times1+3\times1=$
19. $18\times1+1\times1=$
20. $2\times1+7\times1=$
21. $5\times1+2\times1=$
22. $6\times1+2\times1=$
23. $7\times1+3\times1=$
24. $5\times1+4\times1=$
25. $5\times1+5\times1=$

VII = 7

VIII =

Work for the Study Hour:

1. $8\times1+2\times1=$
2. $5\times1+5\times1=$
3. $2\times1+3\times1=$
4. $6\times1+3\times1=$
5. $3\times1+5\times1=$
6. $7\times1+2\times1=$
7. $7\times1+1\times1=$
8. $5\times1+3\times1=$
9. $8\times1+1\times1=$
10. $2\times1+2\times1=$

6 = VI 2 = 3 = 4 = 5 = 1 =

LESSON XLIII.

Work for the Recitation Hour: Form of answer: "Six times 1 and four times 1 are ten times 1."

1. $6\times1+4\times1=10\times1$
2. $4\times1+6\times1=$
3. $3\times1+4\times1=$
4. $9\times1+1\times1=$
5. $4\times1+5\times1=$
6. $6\times1+2\times1=$
7. $3\times1+6\times1=$
8. $9\times1+1\times1=$
9. $13\times1+1\times1=$
10. $1\times1+17\times1=$
11. $7\times1+3\times1=$
12. $5\times1+2\times1=$
13. $3\times1+3\times1=$
14. $2\times1+7\times1=$
15. $5\times1+5\times1=$
16. $4\times1+3\times1=$
17. $1\times1+9\times1=$
18. $5\times1+4\times1=$
19. $2\times1+6\times1=$
20. $6\times1+3\times1=$
21. $1\times1+18\times1=$
22. $3\times1+7\times1=$
23. $4\times1+4\times1=$
24. $5\times1+1\times1=$
25. $2\times1+6\times1=$
26. $3\times1+2\times1=$

$2 = \mathrm{II} \quad 8 = \quad 3 = \quad 7 = \quad 5 = \quad 4 = \quad 6 =$

Work for the Study Hour:

1. $7\times1+3\times1=$
2. $11\times1+1\times1=$
3. $5\times1+4\times1=$
4. $9\times1+1\times1=$
5. $4\times1+4\times1=$
6. $3\times1+2\times1=$
7. $3\times1+7\times1=$
8. $6\times1+3\times1=$
9. $2\times1+6\times1=$
10. $4\times1+3\times1=$

$\mathrm{V}=5 \quad \mathrm{I}= \quad \mathrm{II}= \quad \mathrm{III}= \quad \mathrm{IV}= \quad \mathrm{VI}=$

LESSON XLIV.

Work for the Recitation Hour: Form of answer: "Five times 1 and six times 1 are eleven times 1."

1. $5\times1+6\times1=11\times1$
2. $6\times1+5\times1=$
3. $8\times1+2\times1=$
4. $5\times1+4\times1=$
5. $3\times1+2\times1=$
6. $3\times1+6\times1=$
7. $7\times1+3\times1=$
8. $4\times1+4\times1=$
9. $9\times1+1\times1=$
10. $1\times1+18\times1=$
11. $7\times1+2\times1=$
12. $5\times1+3\times1=$
13. $2\times1+8\times1=$
14. $4\times1+5\times1=$
15. $2\times1+3\times1=$
16. $6\times1+3\times1=$
17. $3\times1+7\times1=$
18. $5\times1+2\times1=$
19. $1\times1+9\times1=$
20. $2\times1+7\times1=$
21. $3\times1+5\times1=$
22. $4\times1+4\times1=$
23. $6\times1+2\times1=$
24. $3\times1+5\times1=$

Work for the Study Hour:

1. $3\times1+7\times1=$
2. $7\times1+2\times1=$
3. $8\times1+2\times1=$
4. $2\times1+5\times1=$
5. $3\times1+5\times1=$
6. $18\times1+1\times1=$
7. $6\times1+2\times1=$
8. $7\times1+3\times1=$
9. $5\times1+4\times1=$
10. $5\times1+5\times1=$

LESSON XLV.

Work for the Recitation Hour: Form of answer: "Seven times 1 and four times 1 are eleven times 1."

1. $7\times1+4\times1=11\times1$
2. $4\times1+7\times1=$
3. $3\times1+4\times1=$
4. $9\times1+1\times1=$
5. $5\times1+6\times1=$
6. $6\times1+3\times1=$
7. $7\times1+3\times1=$
8. $2\times1+2\times1=$
9. $3\times1+4\times1=$
10. $2\times1+7\times1=$
11. $6\times1+2\times1=$
12. $4\times1+5\times1=$
13. $5\times1+3\times1=$
14. $5\times1+5\times1=$
15. $4\times1+3\times1=$
16. $1\times1+17\times1=$
17. $6\times1+5\times1=$
18. $3\times1+6\times1=$
19. $7\times1+7\times1=$
20. $3\times1+3\times1=$
21. $4\times1+3\times1=$
22. $6\times1+4\times1=$
23. $7\times1+2\times1=$
24. $2\times1+6\times1=$
25. $16\times1+1\times1=$
26. $3\times1+5\times1=$
27. $7\times1+3\times1=$

IX = 9 X = VII = V = III =
VIII = IV = VI = II =

Work for the Study Hour:

1. $6\times1+4\times1=$
2. $9\times1+1\times1=$
3. $3\times1+4\times1=$
4. $4\times1+5\times1=$
5. $6\times1+2\times1=$
6. $7\times1+3\times1=$
7. $3\times1+3\times1=$
8. $2\times1+7\times1=$
9. $6\times1+3\times1=$
10. $3\times1+7\times1=$

4 = IV 2 = VII = 5 = II =
VI = 9 = III = 7 = 1 =

LESSON XLVI.

Work for the Recitation Hour: Form of answer: "Eight times 1 and three times 1 are eleven times 1."

1. $8\times1+3\times1=11\times1$
2. $3\times1+8\times1=$
3. $9\times1+2\times1=$
4. $2\times1+9\times1=$
5. $7\times1+2\times1=$
6. $3\times1+7\times1=$
7. $4\times1+5\times1=$
8. $4\times1+4\times1=$
9. $19\times1+1\times1=$
10. $5\times1+5\times1=$
11. $7\times1+1\times1=$
12. $7\times1+4\times1=$
13. $2\times1+6\times1=$
14. $6\times1+3\times1=$
15. $9\times1+2\times1=$
16. $4\times1+7\times1=$

17. $7\times1+3\times1=$
18. $2\times1+5\times1=$
19. $5\times1+4\times1=$
20. $7\times1+2\times1=$
21. $6\times1+4\times1=$
22. $6\times1+5\times1=$

Work for the Study Hour:

1. $5\times1+6\times1=$
2. $8\times1+2\times1=$
3. $3\times1+6\times1=$
4. $5\times1+4\times1=$
5. $7\times1+3\times1=$
6. $4\times1+5\times1=$
7. $3\times1+5\times1=$
8. $6\times1+2\times1=$
9. $9\times1+1\times1=$
10. $7\times1+2\times1=$

The children write on slates in Roman letters the numbers from 1 to 8 inclusive; they write in figures the same numbers.

LESSON XLVII.

Work for the Recitation Hour: Form of answer: "Three times 1 and three times 1 are six times 1."

1. $3\times1+3\times1=6\times1$
2. $7\times1+2\times1=$
3. $9\times1+1\times1=$
4. $7\times1+4\times1=$
5. $6\times1+5\times1=$
6. $2\times1+2\times1=$
7. $5\times1+4\times1=$
8. $9\times1+2\times1=$
9. $3\times1+4\times1=$
10. $5\times1+4\times1=$
11. $3\times1+8\times1=$
12. $7\times1+3\times1=$
13. $2\times1+5\times1=$
14. $2\times1+9\times1=$

15. $8\times1+2\times1=$
16. $1\times1+16\times1=$
17. $3\times1+8\times1=$
18. $6\times1+4\times1=$
19. $7\times1+2\times1=$
20. $9\times1+1\times1=$
21. $8\times1+3\times1=$
22. $3\times1+6\times1=$
23. $7\times1+3\times1=$
24. $2\times1+9\times1=$
25. $3\times1+4\times1=$
26. $4\times1+6\times1=$

9 = IX   3 =   7 =   10 =   5 =

2 =   8 =   4 =   6 =

Work for the Study Hour:

1. $7\times1+4\times1=$
2. $5\times1+6\times1=$
3. $6\times1+3\times1=$
4. $4\times1+7\times1=$
5. $7\times1+3\times1=$
6. $6\times1+3\times1=$
7. $3\times1+4\times1=$
8. $7\times1+2\times1=$
9. $5\times1+4\times1=$
10. $6\times1+2\times1=$

VII =   V =   IX =   2 =   III =

X =   7 =   8 =   4 =   I =

LESSON XLVIII.

Work for the Recitation Hour: Form of answer: "Six times 1 and six times 1 are twelve times 1."

1. $6\times1+6\times1=12\times1$
2. $8\times1+4\times1=$
3. $4\times1+8\times1=$
4. $3\times1+3\times1=$

5. $2\times1+7\times1=$
6. $9\times1+1\times1=$
7. $4\times1+7\times1=$
8. $5\times1+4\times1=$
9. $2\times1+6\times1=$
10. $6\times1+5\times1=$
11. $7\times1+3\times1=$
12. $4\times1+4\times1=$
13. $5\times1+5\times1=$
14. $7\times1+2\times1=$
15. $11\times1+1\times1=$
16. $4\times1+7\times1=$
17. $4\times1+5\times1=$
18. $6\times1+2\times1=$
19. $5\times1+6\times1=$
20. $3\times1+7\times1=$
21. $8\times1+3\times1=$
22. $4\times1+2\times1=$
23. $3\times1+8\times1=$
24. $6\times1+5\times1=$

Work for the Study Hour:

1. $5\times1+5\times1=$
2. $4\times1+5\times1=$
3. $2\times1+7\times1=$
4. $7\times1+3\times1=$
5. $5\times1+6\times1=$
6. $2\times1+2\times1=$
7. $6\times1+5\times1=$
8. $3\times1+7\times1=$
9. $3\times1+5\times1=$
10. $7\times1+3\times1=$

IV = 5 = VII = IX = X =
4 = 3 = 7 = 6 = 2 =

LESSON XLIX.

Work for the Recitation Hour: Form of answer: "Nine times 1 and three times 1 are twelve times 1."

1. $9\times1+3\times1=12\times1$
2. $3\times1+9\times1=$
3. $6\times1+5\times1=$
4. $3\times1+4\times1=$
5. $7\times1+3\times1=$
6. $9\times1+2\times1=$
7. $3\times1+5\times1=$
8. $6\times1+3\times1=$
9. $7\times1+4\times1=$
10. $4\times1+6\times1=$
11. $3\times1+9\times1=$
12. $5\times1+6\times1=$
13. $4\times1+5\times1=$
14. $7\times1+4\times1=$
15. $3\times1+3\times1=$
16. $7\times1+2\times1=$
17. $2\times1+9\times1=$
18. $3\times1+6\times1=$
19. $4\times1+7\times1=$
20. $6\times1+6\times1=$
21. $4\times1+8\times1=$
22. $3\times1+5\times1=$

Work for the Study Hour:

1. $8\times1+3\times1=$
2. $9\times1+2\times1=$
3. $3\times1+7\times1=$
4. $5\times1+5\times1=$
5. $5\times1+3\times1=$
6. $6\times1+5\times1=$
7. $7\times1+2\times1=$
8. $7\times1+4\times1=$
9. $2\times1+6\times1=$
10. $6\times1+4\times1=$

The children write in Roman letters the numbers four, five, ten, six, and three. They write in figures III, IX, VII, II, VIII, and I.

LESSON L.

Work for the Recitation Hour: Form of

answer: "Seven times 1 and five times 1 are twelve times 1."

1. $7\times1+5\times1=12\times1$
2. $5\times1+7\times1=$
3. $6\times1+3\times1=$
4. $3\times1+3\times1=$
5. $7\times1+3\times1=$
6. $4\times1+3\times1=$
7. $8\times1+3\times1=$
8. $5\times1+3\times1=$
9. $9\times1+3\times1=$
10. $6\times1+5\times1=$
11. $3\times1+6\times1=$
12. $5\times1+6\times1=$
13. $4\times1+4\times1=$
14. $6\times1+4\times1=$
15. $8\times1+4\times1=$
16. $3\times1+4\times1=$
17. $7\times1+4\times1=$
18. $5\times1+4\times1=$
19. $3\times1+5\times1=$
20. $5\times1+5\times1=$
21. $4\times1+5\times1=$
22. $4\times1+6\times1=$
23. $2\times1+6\times1=$
24. $6\times1+6\times1=$

WORK FOR THE STUDY HOUR:

1. $4\times1+5\times1=$
2. $6\times1+6\times1=$
3. $8\times1+4\times1=$
4. $4\times1+7\times1=$
5. $7\times1+3\times1=$
6. $9\times1+3\times1=$
7. $7\times1+5\times1=$
8. $5\times1+6\times1=$
9. $3\times1+7\times1=$
10. $6\times1+2\times1=$
11. $7\times1+2\times1=$
12. $3\times1+8\times1=$
13. $6\times1+5\times1=$
14. $5\times1+7\times1=$

LESSON LI.

WORK FOR THE RECITATION HOUR: Form

of answer: "Seven times 1 and four times 1 are eleven times 1."

1. $7\times1+4\times1=11\times1$
2. $3\times1+3\times1=$
3. $2\times1+7\times1=$
4. $5\times1+7\times1=$
5. $3\times1+7\times1=$
6. $4\times1+7\times1=$
7. $2\times1+8\times1=$
8. $4\times1+8\times1=$
9. $3\times1+8\times1=$
10. $3\times1+9\times1=$
11. $2\times1+9\times1=$
12. $1\times1+9\times1=$
13. $10\times1+1\times1=$
14. $2\times1+8\times1=$
15. $7\times1+5\times1=$
16. $1\times1+19\times1=$
17. $18\times1+1\times1=$
18. $2\times1+6\times1=$

WORK FOR THE STUDY HOUR: The pupils review thoroughly upon their slates such subject-matter of the preceding fifty-one lessons as the teacher judges they most need to review.

[PUPILS' EDITION.]

THE PESTALOZZIAN SERIES.

FIRST-YEAR TEXT-BOOK

OF

PRIMARY ARITHMETIC.

For Pupils in the First Grade, First Year, of Public
Schools. Based upon Pestalozzi's System of
Teaching Elementary Number.

By JAMES H. HOOSE, A.M., Ph.D.,

Principal of the State Normal and Training School at Cortland,
N. Y., Author of "Studies in Articulation," "On the
Province of Methods of Teaching," etc.

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1874

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C. W. BARDEEN, PUBLISHER,
1882.

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INTRODUCTION.

Having completed the Manual, the pupils are now furnished with the First-Year Text-Book to use in recitation and study in connection with oral lessons and the blackboard; they can read figures from the page as well as from the blackboard, or they will do it soon by the exercise of patience and perseverance by the teacher; they are not expected to read the examples which are printed in words — only those which are composed entirely of figures and signs; they are taught at first to keep the place on the page by following carefully and rapidly with the index-finger the lines, figures and signs, while they are reading the examples.

The ends to be served by placing a text-book in the hands of pupils thus early in their school-life, are the following: (1) To educate pupils to understand subject-matter when it is set to them in a printed text; for the mass of pupils do not interpret printed forms as intelligently and readily as they do the same matter when it is placed before them by objects, by the blackboard, or is dictated to them by the teacher; (2) To enable the teacher to conserve her physical powers while conducting recitations, thus increasing the effectiveness of her mental energies to teach the pupils; (3) To expedite the general work of the recitation, thus affording more time to be devoted to reviews and to drilling individual members of the class.

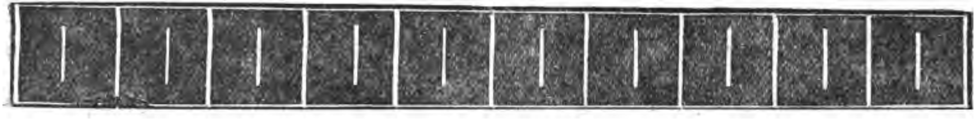
The force of these ends appears when it is recollected that the mass of children finish their school-life at an early age, and that the schools should give to them, before they stop attending, a maximum of intelligent power and a positive mastery over the text-forms of knowledge, however familiar they may be with objects and the blackboard; pupils are influenced by reading-matter no farther than they can read it intelligently and easily; nor are the demands of scholarship satisfied with less attainments than these.

PESTALOZZIAN SERIES.

FIRST-YEAR TEXT-BOOK.

ARITHMETICAL CHART.

FIGURE 1. The 1s.



NOTE: The teacher will make this chart upon the blackboard. The size of the squares should be so large that pupils can read easily the figures in them—one foot square being proper dimensions for each of the ten squares in the row. In case there is insufficient blackboard surface, the chart can be made upon strips of muslin or paper (as the unfigured side of wall-paper) and held by tacks against the walls of the school-room. Colored crayons or inks will be found advantageous in making the chart.

DIRECTIONS: Pupils point in succession to the numbers while they are answering examples. Suppose the question is, "Four times one and two times one are how many times one?" A pupil points rapidly and silently to the first four 1s, beginning at the left side of the chart; with the pointer resting after the fourth 1, he says, "Four times 1," and then moves the pointer over two more 1s, saying, "and two times one are six times one." This form is to be observed throughout the year, substituting 2s, 3s, etc., according to the chart used.

FIRST-YEAR TEXT-BOOK.

LESSON I.

Notes: 1. The form of the question for example 1, if asked, is, "One time one and one time one are how many times one?" The form of the answer is, "One time one and one time are two times one."

2. In this lesson and all that follow, the pupils perform first the examples in the lesson: then they review them over and over again, as time permits, no pupil having the same example twice in one recitation.

3 Throughout the book the pupils review daily the new subject-matter of all the preceding lessons.

1. $1\times1+1\times1=2\times1$
2. $2\times1+1\times1=$
3. $1\times1+3\times1=$
4. $2\times1+2\times1=$
5. $1\times1+2\times1=$
6. $3\times1+1\times1=$
7. $2\times1+3\times1=$
8. $3\times1+2\times1=$
9. $5\times1+1\times1=$
10. $1\times1+4\times1=$

Note: For work of the study hour, the teacher assigns hereafter a lesson on a specified page of the text-book; the pupils copy the examples on slates, and write the answers.

LESSON II.

Note: The form of the question for example 1, if asked, is, "Three times one and three times one are how many times one?" The form of the answer is, "Three times one and three times one are six times one."

1 $3\times1+3\times1=6\times1$
2. $4\times1+1\times1=$
3. $1\times1+5\times1=$
4. $4\times1+1\times1=$
5. $2\times1+4\times1=$
6. $4\times1+2\times1=$
7. $3\times1+4\times1=$
8. $4\times1+3\times1=$
9. $8\times1+1\times1=$
10. $2\times1+5\times1=$

LESSON III.

Note: The form of the question for example 1, if asked, is, "Seven times one and one time one are how many times one?" The form of the answer should be, "Seven times one and one time one are eight times one."

1. $7\times1+1\times1=8\times1$
2. $19\times1+1\times1=$
3. $6\times1+2\times1=$
4. $3\times1+4\times1=$
5. $4\times1+4\times1=$
6. $1\times1+12\times1=$
7. $5\times1+3\times1=$
8. $3\times1+3\times1=$
9. $9\times1+1\times1=$
10. $3\times1+5\times1=$
11. $12\times1+1\times1=$
12. $2\times1+3\times1=$
13. $5\times1+2\times1=$
14. $2\times1+6\times1=$
15. $15\times1+1\times1=$

LESSON IV.

1. $8\times1+3\times1=11\times1$
2. $7\times1+1\times1=$
3. $4\times1+5\times1=$
4. $3\times1+2\times1=$
5. $6\times1+5\times1=$
6. $8\times1+4\times1=$
7. $6\times1+3\times1=$
8. $2\times1+5\times1=$
9. $7\times1+5\times1=$
10. $6\times1+6\times1=$
11. $4\times1+3\times1=$
12. $9\times1+2\times1=$
13. $5\times1+4\times1=$
14. $2\times1+7\times1=$
15. $6\times1+4\times1=$
16. $5\times1+6\times1=$
17. $8\times1+3\times1=$
18. $2\times1+9\times1=$

LESSON V.

1. $9\times1+2\times1=11\times1$
2. $3\times1+6\times1=$
3. $4\times1+6\times1=$
4. $7\times1+3\times1=$
5. $8\times1+4\times1=$
6. $5\times1+6\times1=$
7. $2\times1+8\times1=$
8. $12\times1+1\times1=$
9. $9\times1+3\times1=$
10. $8\times1+2\times1=$
11. $6\times1+3\times1=$
12. $5\times1+5\times1=$
13. $3\times1+8\times1=$
14. $2\times1+7\times1=$
15. $6\times1+4\times1=$
16. $9\times1+1\times1=$
17. $1\times1+18\times1=$
18. $3\times1+6\times1=$
19. $4\times1+7\times1=$
20. $2\times1+8\times1=$
21. $5\times1+2\times1=$
22. $3\times1+3\times1=$

LESSON VI.

1. $10\times1+2\times1=12\times1$
2. $2\times1+10\times1=$
3. $6\times1+5\times1=$
4. $5\times1+4\times1=$
5. $4\times1+3\times1=$
6. $8\times1+4\times1=$
7. $7\times1+3\times1=$
8. $2\times1+9\times1=$
9. $6\times1+4\times1=$
10. $5\times1+6\times1=$
11. $8\times1+3\times1=$
12. $3\times1+3\times1=$
13. $4\times1+6\times1=$
14. $3\times1+5\times1=$
15. $2\times1+3\times1=$
16. $9\times1+2\times1=$
17. $4\times1+8\times1=$
18. $11\times1+1\times1=$
19. $2\times1+6\times1=$
20. $8\times1+1\times1=$
21. $6\times1+6\times1=$
22. $2\times1+7\times1=$
23. $5\times1+5\times1=$
24. $2\times1+9\times1=$

X = 10   V =   I =   IX =   IV =

II =   VII =   III =   VIII =

LESSON VII.

1. $9\times1+1\times1=10\times1$
2. $16\times1+1\times1=$
3. $1\times1+18\times1=$
4. $6\times1+5\times1=$
5. $2\times1+9\times1=$
6. $8\times1+4\times1=$
7. $6\times1+3\times1=$
8. $4\times1+5\times1=$

9. $3\times1+4\times1=$
10. $8\times1+3\times1=$
11. $5\times1+6\times1=$
12. $7\times1+4\times1=$
13. $3\times1+6\times1=$
14. $5\times1+4\times1=$
15. $4\times1+7\times1=$
16. $3\times1+9\times1=$
17. $3\times1+7\times1=$
18. $6\times1+4\times1=$
19. $3\times1+3\times1=$
20. $2\times1+10\times1=$
21. $13\times1+1\times1=$
22. $3\times1+8\times1=$

XI=11 XII= XIII=

LESSON VIII.

1. $6\times1+7\times1=13\times1$
2. $7\times1+6\times1=13\times1$
3. $3\times1+8\times1=$
4. $6\times1+6\times1=$
5. $5\times1+4\times1=$
6. $8\times1+3\times1=$
7. $4\times1+6\times1=$
8. $3\times1+9\times1=$
9. $2\times1+5\times1=$
10. $7\times1+5\times1=$
11. $8\times1+4\times1=$
12. $6\times1+5\times1=$
13. $4\times1+4\times1=$
14. $7\times1+3\times1=$
15. $3\times1+7\times1=$
16. $4\times1+5\times1=$
17. $5\times1+6\times1=$
18. $2\times1+9\times1=$
19. $3\times1+4\times1=$
20. $2\times1+10\times1=$

13=XIII 8= 2= 7= 10=

9= 5= 4= 6= 3=

LESSON IX.

1. $8\times1+5\times1=13\times1$
2. $5\times1+8\times1=$
3. $4\times1+5\times1=$
4. $9\times1+3\times1=$
5. $6\times1+7\times1=$
6. $3\times1+4\times1=$
7. $5\times1+6\times1=$
8. $2\times1+11\times1=$
9. $10\times1+1\times1=$
10. $6\times1+3\times1=$
11. $6\times1+6\times1=$
12. $7\times1+6\times1=$
13. $5\times1+4\times1=$
14. $3\times1+9\times1=$
15. $6\times1+5\times1=$
16. $8\times1+2\times1=$
17. $4\times1+8\times1=$
18. $7\times1+3\times1=$
19. $2\times1+7\times1=$
20. $8\times1+5\times1=$

LESSON X.

1. $9\times1+4\times1=13\times1$
2. $4\times1+9\times1=$
3. $10\times1+3\times1=$
4. $3\times1+10\times1=$
5. $8\times1+2\times1=$
6. $9\times1+3\times1=$
7. $7\times1+6\times1=$
8. $3\times1+5\times1=$
9. $6\times1+6\times1=$
10. $7\times1+4\times1=$
11. $9\times1+2\times1=$
12. $2\times1+7\times1=$
13. $3\times1+9\times1=$
14. $6\times1+5\times1=$
15. $7\times1+6\times1=$
16. $5\times1+4\times1=$

17. $8\times1+3\times1=$
18. $4\times1+5\times1=$
19. $7\times1+3\times1=$
20. $5\times1+7\times1=$
21. $1\times1+18\times1=$
22. $2\times1+12\times1=$
23. $8\times1+2\times1=$

XIV = 14 XV =

LESSON XI.

1. $9\times1+3\times1=12\times1$
2. $5\times1+4\times1=$
3. $3\times1+3\times1=$
4. $8\times1+3\times1=$
5. $6\times1+7\times1=$
6. $2\times1+6\times1=$
7. $6\times1+5\times1=$
8. $9\times1+4\times1=$
9. $2\times1+10\times1=$
10. $7\times1+6\times1=$
11. $3\times1+9\times1=$
12. $8\times1+5\times1=$
13. $7\times1+3\times1=$
14. $6\times1+2\times1=$
15. $7\times1+5\times1=$
16. $5\times1+4\times1=$
17. $10\times1+3\times1=$
18. $2\times1+8\times1=$
19. $11\times1+2\times1=$
20. $3\times1+10\times1=$
21. $5\times1+5\times1=$
22. $2\times1+10\times1=$

V=5 XV= XIV= IV= VIII=
IX= XI= IV= VI=

LESSON XII.

1. $13\times1+1\times1=14\times1$
2. $2\times1+8\times1=$
3. $4\times1+9\times1=$
4. $3\times1+6\times1=$
5. $10\times1+3\times1=$
6. $9\times1+4\times1=$
7. $3\times1+8\times1=$
8. $7\times1+6\times1=$
9. $6\times1+2\times1=$
10. $5\times1+6\times1=$
11. $4\times1+9\times1=$
12. $5\times1+8\times1=$
13. $3\times1+7\times1=$
14. $2\times1+6\times1=$
15. $9\times1+2\times1=$
16. $5\times1+7\times1=$
17. $4\times1+5\times1=$
18. $10\times1+3\times1=$
19. $8\times1+4\times1=$
20. $7\times1+3\times1=$
21. $2\times1+6\times1=$
22. $18\times1+1\times1=$

LESSON XIII.

1. $1\times1+16\times1=17\times1$
2. $3\times1+9\times1=$
3. $4\times1+8\times1=$
4. $3\times1+7\times1=$
5. $5\times1+5\times1=$
6. $4\times1+9\times1=$
7. $3\times1+6\times1=$
8. $7\times1+6\times1=$
9. $3\times1+8\times1=$
10. $5\times1+7\times1=$
11 $4\times1+8\times1=$
12. $2\times1+9\times1=$
13. $6\times1+7\times1=$
14. $4\times1+3\times1=$
15. $9\times1+4\times1=$
16. $5\times1+8\times1=$
17. $2\times1+5\times1=$
18. $3\times1+10\times1=$
19. $9\times1+2\times1=$
20. $4\times1+9\times1=$

LESSON XIV.

Part 1. The pupils are taught to read and write numbers from 21 to 30 inclusive, and to know the corresponding ordinals.

Part 2.—

1. $7\times1+7\times1=14\times1$
2. $6\times1+8\times1=$
3. $8\times1+6\times1=$
4. $2\times1+8\times1=$
5. $5\times1+6\times1=$
6. $7\times1+6\times1=$
7. $4\times1+8\times1=$
8. $3\times1+7\times1=$
9. $8\times1+6\times1=$
10. $5\times1+8\times1=$
11. $2\times1+9\times1=$
12. $6\times1+5\times1=$
13. $7\times1+2\times1=$
14. $2\times1+8\times1=$
15. $7\times1+3\times1=$
16. $5\times1+4\times1=$
17. $6\times1+3\times1=$
18. $7\times1+7\times1=$
19. $4\times1+7\times1=$
20. $9\times1+4\times1=$

LESSON XV.

1. $9\times1+5\times1=14\times1$
2. $5\times1+9\times1=$
3. $6\times1+7\times1=$
4. $7\times1+7\times1=$
5. $3\times1+8\times1=$
6. $6\times1+6\times1=$
7. $5\times1+4\times1=$
8. $8\times1+3\times1=$
9. $7\times1+6\times1=$

10 $4\times1+3\times1=$

11. $8\times1+2\times1=$
12. $6\times1+8\times1=$

13. $7\times1+3\times1=$
14. $2\times1+5\times1=$
15. $5\times1+3\times1=$
16. $2\times1+9\times1=$
17. $8\times1+6\times1=$
18. $6\times1+5\times1=$
19. $2\times1+12\times1=$
20. $3\times1+6\times1=$

LESSON XVI.

Part 1. The pupils are taught to count and to make numbers from 31 to 40 inclusive; they also learn the corresponding ordinals.

Part 2.—

1. $8\times1+2\times1=10\times1$
2. $7\times1+7\times1=$
3. $3\times1+8\times1=$
4. $6\times1+7\times1=$
5. $5\times1+4\times1=$
6. $2\times1+8\times1=$
7. $5\times1+9\times1=$
8. $7\times1+6\times1=$
9. $3\times1+8\times1=$
10. $7\times1+7\times1=$
11. $6\times1+8\times1=$
12. $8\times1+5\times1=$
13. $7\times1+4\times1=$
14. $3\times1+9\times1=$
15. $2\times1+11\times1=$
16. $4\times1+8\times1=$
17. $5\times1+3\times1=$
18. $2\times1+3\times1=$
19. $7\times1+3\times1=$
20. $9\times1+5\times1=$
21. $7\times1+1\times1=$
22. $1\times1+16\times1=$

LESSON XVII.

1. $1\times1+14\times1=15\times1$
2. $5\times1+9\times1=$
3. $2\times1+8\times1=$
4. $7\times1+4\times1=$
5. $3\times1+3\times1=$
6. $6\times1+3\times1=$
7. $8\times1+3\times1=$
8. $4\times1+3\times1=$
9. $9\times1+3\times1=$
10. $7\times1+3\times1=$
11. $5\times1+3\times1=$
12. $5\times1+8\times1=$
13. $3\times1+8\times1=$
14. $4\times1+8\times1=$
15. $2\times1+7\times1=$
16. $6\times1+7\times1=$
17. $4\times1+7\times1=$
18. $7\times1+7\times1=$
19. $5\times1+7\times1=$
20. $2\times1+7\times1=$
21. $3\times1+6\times1=$
22. $7\times1+6\times1=$

LESSON XVIII.

1. $10\times1+4\times1=14\times1$
2. $4\times1+10\times1=$
3. $12\times1+2\times1=$
4. $2\times1+12\times1=$
5. $6\times1+7\times1=$
6. $5\times1+3\times1=$
7. $5\times1+6\times1=$
8. $9\times1+4\times1=$
9. $2\times1+8\times1=$
10. $6\times1+6\times1=$
11. $8\times1+6\times1=$
12. $7\times1+6\times1=$
13. $9\times1+5\times1=$
14. $4\times1+5\times1=$
15. $10\times1+3\times1=$
16. $6\times1+5\times1=$
17. $3\times1+11\times1=$
18. $7\times1+6\times1=$

19. $3\times1+7\times1=$
20. $5\times1+5\times1=$
21. $7\times1+4\times1=$
22. $2\times1+6\times1=$

13 = XIII
15 =
12 =
8 =
7 =
10 =
14 =
5 =
11 =
9 =
6 =

LESSON XIX.

Part 1. The pupils are taught to count and to write the numbers from 41 to 50 inclusive; they are taught the corresponding ordinals.

Part 2.—

1. $8\times1+7\times1=15\times1$
2. $7\times1+8\times1=$
3. $3\times1+9\times1=$
4. $8\times1+6\times1=$
5. $5\times1+4\times1=$
6. $3\times1+1\times1=$
7. $6\times1+7\times1=$
8. $8\times1+4\times1=$
9. $5\times1+8\times1=$
10. $9\times1+5\times1=$
11. $6\times1+6\times1=$
12. $7\times1+7\times1=$
13. $9\times1+4\times1=$
14. $3\times1+10\times1=$
15. $7\times1+6\times1=$
16. $3\times1+5\times1=$
17. $5\times1+9\times1=$
18. $4\times1+9\times1=$
19. $3\times1+8\times1=$
20. $2\times1+12\times1=$
21. $7\times1+4\times1=$
22. $6\times1+5\times1=$

LESSON XX.

PART 1. The children are taught to count and to make the numbers from 51 to 60 inclusive and to know the corresponding ordinals.

PART 2.—

1. $6\times1+4\times1=10\times1$
2. $8\times1+7\times1=$
3. $4\times1+6\times1=$
4. $7\times1+4\times1=$
5. $9\times1+3\times1=$
6. $2\times1+12\times1=$
7. $8\times1+6\times1=$
8. $7\times1+3\times1=$
9. $8\times1+5\times1=$
10. $4\times1+7\times1=$
11. $3\times1+8\times1=$
12. $9\times1+5\times1=$
13. $4\times1+3\times1=$
14. $7\times1+4\times1=$
15. $5\times1+5\times1=$
16. $6\times1+3\times1=$
17. $9\times1+2\times1=$
18. $3\times1+6\times1=$
19. $8\times1+3\times1=$
20. $9\times1+4\times1=$
21. $3\times1+12\times1=$

LESSON XXI.

1. $10\times1+5\times1=15\times1$
2. $5\times1+10\times1=$
3. $2\times1+8\times1=$
4. $6\times1+7\times1=$
5. $8\times1+7\times1=$
6. $3\times1+11\times1=$
7. $7\times1+8\times1=$
8. $3\times1+9\times1=$
9. $9\times1+4\times1=$
10. $6\times1+9\times1=$

11. $11\times1+3\times1=$
12. $2\times1+8\times1=$
13. $9\times1+6\times1=$
14. $4\times1+10\times1=$
15. $3\times1+8\times1=$
16. $2\times1+12\times1=$
17. $4\times1+9\times1=$
18. $3\times1+6\times1=$
19. $5\times1+8\times1=$
20. $9\times1+5\times1=$
21. $7\times1+3\times1=$
22. $6\times1+8\times1=$
23. $2\times1+5\times1=$
24. $7\times1+7\times1=$

LESSON XXII.

Part 1. The pupils are taught to read and write numbers from 61 to 70 inclusive; they also learn the corresponding ordinals.

Part 2.—

1. $3\times1+8\times1=11\times1$
2. $7\times1+7\times1=$
3. $8\times1+7\times1=$
4. $3\times1+11\times1=$
5. $8\times1+4\times1=$
6. $7\times1+8\times1=$
7. $4\times1+8\times1=$
8. $3\times1+6\times1=$
9. $5\times1+9\times1=$
10. $2\times1+7\times1=$
11. $4\times1+9\times1=$
12. $3\times1+8\times1=$
13. $5\times1+8\times1=$
14. $4\times1+7\times1=$
15. $3\times1+7\times1=$
16 $6\times1+8\times1=$
17. $2\times1+10\times1=$
18. $1\times1+18\times1=$
19. $7\times1+6\times1=$
20. $3\times1+5\times1=$

21. $4\times1+6\times1=$
22. $5\times1+7\times1=$
23. $2\times1+11\times1=$
24. $4\times1+5\times1=$

LESSON XXIII.

1. $9\times1+6\times1=15\times1$
2. $6\times1+9\times1=$
3. $3\times1+8\times1=$
4. $5\times1+9\times1=$
5. $7\times1+8\times1=$
6. $3\times1+11\times1=$
7. $8\times1+6\times1=$
8. $4\times1+9\times1=$
9. $5\times1+10\times1=$
10. $6\times1+5\times1=$
11. $8\times1+7\times1=$
12. $4\times1+10\times1=$
13. $3\times1+9\times1=$
14. $5\times1+8\times1=$
15. $7\times1+6\times1=$
16. $4\times1+11\times1=$
17. $6\times1+7\times1=$
18. $5\times1+7\times1=$

LESSON XXIV.

Part 1. The pupils learn to read and write numbers from 71 to 80 inclusive; and learn the corresponding ordinals.

Part 2.—

1 $11\times1+4\times1=15\times1$
2. $4\times1+11\times1=$
3. $7\times1+6\times1=$
4. $3\times1+8\times1=$
5. $5\times1+9\times1=$
6. $6\times1+8\times1=$
7. $11\times1+3\times1=$
8. $2\times1+11\times1=$
9. $9\times1+6\times1=$
10. $8\times1+4\times1=$

11. $7\times1+8\times1=$
12. $6\times1+6\times1=$
13. $3\times1+3\times1=$
14. $9\times1+5\times1=$
15. $3\times1+12\times1=$
16. $4\times1+10\times1=$
17. $7\times1+7\times1=$
18. $5\times1+8\times1=$
19. $10\times1+5\times1=$
20. $6\times1+7\times1=$

LESSON XXV.

1. $12\times1+3\times1=15\times1$
2. $3\times1+12\times1=$
3. $2\times1+12\times1=$
4. $6\times1+7\times1=$
5. $2\times1+8\times1=$
6. $9\times1+6\times1=$
7. $7\times1+5\times1=$
8. $3\times1+9\times1=$
9. $5\times1+9\times1=$
10. $6\times1+8\times1=$
11. $7\times1+8\times1=$
12. $3\times1+11\times1=$
13. $2\times1+8\times1=$
14. $9\times1+5\times1=$
15. $8\times1+6\times1=$
16. $7\times1+7\times1=$
17. $4\times1+8\times1=$
18. $3\times1+8\times1=$
19. $6\times1+6\times1=$
20. $5\times1+10\times1=$
21. $5\times1+8\times1=$
22. $6\times1+7\times1=$

LESSON XXVI.

Oral Work:

1. $3\times1+2\times1+1\times1=6\times1$
2. $5\times1+3\times1+1\times1=$
3. $2\times1+2\times1+2\times1=$

4. $4 \times 1 + 1 \times 1 + 2 \times 1 =$
5. $6 \times 1 + 3 \times 1 + 1 \times 1 =$
6. $3 \times 1 + 3 \times 1 + 2 \times 1 =$
7. $4 \times 1 + 1 \times 1 + 1 \times 1 =$
8. $2 \times 1 + 3 \times 1 + 2 \times 1 =$
9. $1 \times 1 + 1 \times 1 + 3 \times 1 =$
10. $6 \times 1 + 1 \times 1 + 1 \times 1 =$
11. $1 \times 1 + 3 \times 1 + 1 \times 1 =$
12. $2 \times 1 + 4 \times 1 + 3 \times 1 =$
13. $5 \times 1 + 1 \times 1 + 3 \times 1 =$
14. $4 \times 1 + 2 \times 1 + 1 \times 1 =$
15. $3 \times 1 + 3 \times 1 + 3 \times 1 =$
16. $2 \times 1 + 2 \times 1 + 5 \times 1 =$
17. $6 \times 1 + 1 \times 1 + 3 \times 1 =$
18. $2 \times 1 + 3 \times 1 + 1 \times 1 =$
19. $5 \times 1 + 5 \times 1 + 1 \times 1 =$
20. $4 \times 1 + 4 \times 1 + 1 \times 1 =$

21. $13 \times 1 + 2 \times 1 = 15 \times 1$
22. $2 \times 1 + 13 \times 1 =$
23. $4 \times 1 + 5 \times 1 =$
24. $3 \times 1 + 11 \times 1 =$
25. $5 \times 1 + 6 \times 1 =$
26. $7 \times 1 + 8 \times 1 =$
27. $6 \times 1 + 7 \times 1 =$
28. $4 \times 1 + 3 \times 1 =$
29. $5 \times 1 + 4 \times 1 =$
30. $2 \times 1 + 11 \times 1 =$
31. $8 \times 1 + 7 \times 1 =$
32. $6 \times 1 + 8 \times 1 =$

33. $11\times1+4\times1=$

34. $8\times1+8\times1=$

35. $6\times1+9\times1=$

36. $3\times1+8\times1=$

37. $5\times1+9\times1=$

38. $2\times1+8\times1=$

39. $4\times1+9\times1=$

40. $6\times1+6\times1=$

LESSON XXVII.

Part 1. The children are taught to count and to make the numbers from 81 to 100 inclusive; they are taught the corresponding ordinals.

Part 2.—

1. $1\times1+5\times1+3\times1=9\times1$
2. $3\times1+5\times1+2\times1=$
3. $1\times1+6\times1+3\times1=$
4. $4\times1+4\times1+2\times1=$
5. $8\times1+1\times1+2\times1=$
6. $3\times1+3\times1+6\times1=$
7. $2\times1+5\times1+1\times1=$
8. $4\times1+3\times1+7\times1=$
9. $5\times1+2\times1+1\times1=$
10. $3\times1+1\times1+1\times1=$
11. $6\times1+1\times1+2\times1=$
12. $2\times1+2\times1+1\times1=$
13. $5\times1+1\times1+2\times1=$

14. $4 \times 1 + 2 \times 1 + 1 \times 1 =$
15. $3 \times 1 + 2 \times 1 + 2 \times 1 =$
16. $2 \times 1 + 7 \times 1 + 1 \times 1 =$
17. $9 \times 1 + 1 \times 1 + 2 \times 1 =$
18. $6 \times 1 + 6 \times 1 + 1 \times 1 =$
19. $1 \times 1 + 5 \times 1 + 2 \times 1 =$
20. $3 \times 1 + 3 \times 1 + 3 \times 1 =$
21. $2 \times 1 + 6 \times 1 + 1 \times 1 =$
22. $5 \times 1 + 5 \times 1 + 5 \times 1 =$
23. $6 \times 1 + 7 \times 1 = 13 \times 1$
24. $3 \times 1 + 12 \times 1 =$
25. $8 \times 1 + 7 \times 1 =$
26. $3 \times 1 + 9 \times 1 =$
27. $7 \times 1 + 6 \times 1 =$
28. $3 \times 1 + 8 \times 1 =$
29. $6 \times 1 + 8 \times 1 =$
30. $5 \times 1 + 8 \times 1 =$

LESSON XXVIII.

1. $2 \times 1 + 3 \times 1 + 2 \times 1 =$
2. $4 \times 1 + 1 \times 1 + 1 \times 1 =$
3. $3 \times 1 + 3 \times 1 + 3 \times 1 =$
4. $1 \times 1 + 4 \times 1 + 5 \times 1 =$
5. $2 \times 1 + 2 \times 1 + 1 \times 1 =$
6. $7 \times 1 + 1 \times 1 + 2 \times 1 =$
7. $5 \times 1 + 1 \times 1 + 1 \times 1 =$
8. $3 \times 1 + 2 \times 1 + 5 \times 1 =$
9. $5 \times 1 + 2 \times 1 + 7 \times 1 =$

10. $3 \times 1 + 2 \times 1 + 1 \times 1 =$
11. $4 \times 1 + 3 \times 1 + 2 \times 1 =$
12. $6 \times 1 + 1 \times 1 + 1 \times 1 =$
13. $1 \times 1 + 2 \times 1 + 3 \times 1 =$
14. $3 \times 1 + 1 \times 1 + 4 \times 1 =$
15. $4 \times 1 + 4 \times 1 + 4 \times 1 =$
16. $2 \times 1 + 1 \times 1 + 3 \times 1 =$
17. $3 \times 1 + 1 \times 1 + 6 \times 1 =$
18. $5 \times 1 + 2 \times 1 + 1 \times 1 =$
19. $1 \times 1 + 1 \times 1 + 6 \times 1 =$
20. $3 \times 1 + 1 \times 1 + 5 \times 1 =$
21. $2 \times 1 + 3 \times 1 + 5 \times 1 =$
22. $4 \times 1 + 1 \times 1 + 3 \times 1 =$
23. $6 \times 1 + 2 \times 1 + 2 \times 1 =$
24. $7 \times 1 + 1 \times 1 + 1 \times 1 =$
25. $1 \times 1 + 5 \times 1 + 3 \times 1 =$

13 = XIII
12 =
11 =
6 =
8 =
5 =
7 =
4 =
2 =
10 =
14 =
1 =
9 =
15 =
3 =

XV = 15
IX =
III =
VIII =
XI =
XIV =
IV =

LESSON XXIX.

ORAL OR ON BLACKBOARD:

1. $2 \times 1 + 1 \times 1 + 1 \times 1 =$
2. $1 \times 1 + 1 \times 1 + 1 \times 1 =$
3. $2 \times 1 + 2 \times 1 + 1 \times 1 =$
4. $3 \times 1 + 1 \times 1 + 2 \times 1 =$
5. $4 \times 1 + 2 \times 1 + 1 \times 1 =$
6. $3 \times 1 + 2 \times 1 + 2 \times 1 =$
7. $1 \times 1 + 1 \times 1 + 3 \times 1 =$
8. $4 \times 1 + 3 \times 1 + 2 \times 1 =$
9. $5 \times 1 + 1 \times 1 + 2 \times 1 =$
10. $3 \times 1 + 3 \times 1 + 3 \times 1 =$
11. $4 \times 1 + 3 \times 1 + 1 \times 1 =$
12. $6 \times 1 + 2 \times 1 + 1 \times 1 =$
13. $5 \times 1 + 3 \times 1 + 1 \times 1 =$
14. $4 \times 1 + 4 \times 1 + 2 \times 1 =$
15. $3 \times 1 + 3 \times 1 + 3 \times 1 =$
16. $5 \times 1 + 2 \times 1 + 2 \times 1 =$
17. $4 \times 1 + 3 \times 1 + 3 \times 1 =$
18. $2 \times 1 + 2 \times 1 + 2 \times 1 =$
19. $3 \times 1 + 5 \times 1 + 2 \times 1 =$
20. $6 \times 1 + 2 \times 1 + 2 \times 1 =$
21. $7 \times 1 + 1 \times 1 + 1 \times 1 =$

22. $2 \times 1 + 5 \times 1 + 1 \times 1 =$
23. $3 \times 1 + 3 \times 1 + 2 \times 1 =$
24. $4 \times 1 + 1 \times 1 + 2 \times 1 =$
25. $7 \times 1 + 2 \times 1 + 1 \times 1 =$
26. $3 \times 1 + 5 \times 1 + 2 \times 1 =$
27. $3 \times 1 + 1 \times 1 + 5 \times 1 =$
28. $6 \times 1 + 2 \times 1 + 1 \times 1 =$
29. $1 \times 1 + 4 \times 1 + 2 \times 1 =$
30. $2 \times 1 + 3 \times 1 + 1 \times 1 =$
31. $2 \times 1 + 1 \times 1 + 2 \times 1 =$
32. $2 \times 1 + 5 \times 1 + 3 \times 1 =$
33. $3 \times 1 + 3 \times 1 + 4 \times 1 =$
34. $2 \times 1 + 2 \times 1 + 5 \times 1 =$
35. $2 \times 1 + 2 \times 1 + 3 \times 1 =$
36. $2 \times 1 + 4 \times 1 + 4 \times 1 =$
37. $1 \times 1 + 2 \times 1 + 2 \times 1 =$
38. $2 \times 1 + 1 \times 1 + 6 \times 1 =$
39. $3 \times 1 + 1 \times 1 + 6 \times 1 =$
40. $1 \times 1 + 3 \times 1 + 4 \times 1 =$
41. $1 \times 1 + 2 \times 1 + 5 \times 1 =$
42. $3 \times 1 + 1 \times 1 + 3 \times 1 =$
43. $2 \times 1 + 1 \times 1 + 5 \times 1 =$
44. $2 \times 1 + 3 \times 1 + 2 \times 1 =$
45. $4 \times 1 + 1 \times 1 + 1 \times 1 =$

46. $3 \times 1 + 3 \times 1 + 1 \times 1 =$
47. $4 \times 1 + 2 \times 1 + 3 \times 1 =$
48. $2 \times 1 + 1 \times 1 + 4 \times 1 =$
49. $1 \times 1 + 2 \times 1 + 7 \times 1 =$
50. $2 \times 1 + 5 \times 1 + 3 \times 1 =$
51. $1 \times 1 + 1 \times 1 + 2 \times 1 =$
52. $1 \times 1 + 5 \times 1 + 3 \times 1 =$

LESSON XXX.

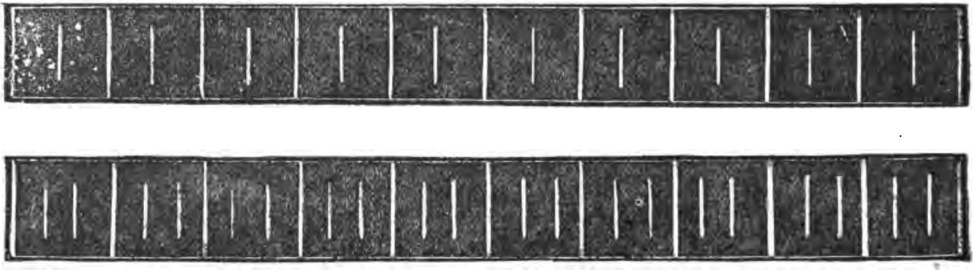
General Notes: I. Indicated multiplication, separated from addition, occurs in this lesson for the first time. The form of question to be used in this new work is, "Two times 2 are how many times 1?" The answer required is, "Two times 2 are 4 times 1."

II. Throughout the rest of the book, the pupils obtain for themselves answers to the examples in new subject-matter; they use either charts or objects, or both. These appliances are referred to daily by pupils, in order to test their understanding of the examples.

1. $2 \times 1 + 3 \times 1 + 3 \times 1 =$
2. $4 \times 1 + 3 \times 1 + 1 \times 1 =$
3. $5 \times 1 + 4 \times 1 + 2 \times 1 =$

ARITHMETICAL CHART.

FIGURE 2. The 1s and 2s.



NOTE: See explanations under Figure 1, page 6 of the text-book, for instructions.

4. $5 \times 1 + 1 \times 1 + 5 \times 1 =$
5. $6 \times 1 + 3 \times 1 + 2 \times 1 =$
6. $4 \times 1 + 5 \times 1 + 2 \times 1 =$
7. $7 \times 1 + 1 \times 1 + 3 \times 1 =$
8. $4 \times 1 + 4 \times 1 + 2 \times 1 =$
9. $8 \times 1 + 1 \times 1 + 2 \times 1 =$
10. $3 \times 1 + 6 \times 1 + 2 \times 1 =$
11. $2 \times 1 + 4 \times 1 + 3 \times 1 =$
12. $8 \times 1 + 2 \times 1 + 1 \times 1 =$
13. $5 \times 1 + 2 \times 1 + 2 \times 1 =$
14. $7 \times 1 + 3 \times 1 + 1 \times 1 =$
15. $1 \times 1 + 6 \times 1 + 2 \times 1 =$
16. $8 \times 1 + 1 \times 1 + 1 \times 1 =$
17. $9 \times 1 + 1 \times 1 + 1 \times 1 =$
18. $2 \times 1 + 2 \times 1 + 1 \times 1 =$
19. $6 \times 1 + 2 \times 1 + 3 \times 1 =$
20. $4 \times 1 + 4 \times 1 + 2 \times 1 =$
21. $7 \times 1 + 1 \times 1 + 2 \times 1 =$
22. $6 \times 1 + 3 \times 1 + 2 \times 1 =$
23. $5 \times 1 + 2 \times 1 + 4 \times 1 =$
24. $3 \times 1 + 3 \times 1 + 2 \times 1 =$
25. $9 \times 1 + 1 \times 1 + 1 \times 1 =$
26. $1 \times 1 + 2 \times 1 + 5 \times 1 =$
27. $3 \times 1 + 1 \times 1 + 4 \times 1 =$

28. $7 \times 1 + 2 \times 1 + 1 \times 1 =$
29. $8 \times 1 + 2 \times 1 + 1 \times 1 =$
30. $2 \times 1 + 1 \times 1 + 4 \times 1 =$

$1 \times 2 = 2 \times 1$ $2 \times 2 =$
$3 \times 2 =$ $4 \times 2 =$

XI = 11 XII = XIII =

LESSON XXXI.

1. $4 \times 1 + 2 \times 1 + 2 \times 1 =$
2. $3 \times 1 + 3 \times 1 + 1 \times 1 =$
3. $4 \times 1 + 6 \times 1 + 1 \times 1 =$
4. $7 \times 1 + 2 \times 1 + 2 \times 1 =$
5. $8 \times 1 + 2 \times 1 + 1 \times 1 =$
6. $3 \times 1 + 3 \times 1 + 2 \times 1 =$
7. $7 \times 1 + 1 \times 1 + 1 \times 1 =$
8. $6 \times 1 + 3 \times 1 + 2 \times 1 =$
9. $4 \times 1 + 5 \times 1 + 3 \times 1 =$
10. $5 \times 1 + 5 \times 1 + 1 \times 1 =$
11. $4 \times 1 + 3 \times 1 + 5 \times 1 =$
12. $1 \times 1 + 3 \times 1 + 3 \times 1 =$
13. $6 \times 1 + 2 \times 1 + 2 \times 1 =$
14. $8 \times 1 + 2 \times 1 + 2 \times 1 =$
15. $1 \times 1 + 2 \times 1 + 3 \times 1 =$
16. $7 \times 1 + 2 \times 1 + 2 \times 1 =$

17. $4 \times 1 + 1 \times 1 + 2 \times 2 =$
18. $2 \times 1 + 6 \times 1 + 3 \times 1 =$
19. $9 \times 1 + 2 \times 1 + 1 \times 1 =$
20. $4 \times 1 + 2 \times 1 + 1 \times 1 =$
21. $5 \times 1 + 3 \times 1 + 2 \times 1 =$
22. $7 \times 1 + 4 \times 1 + 1 \times 1 =$
23. $2 \times 1 + 2 \times 1 + 4 \times 1 =$
24. $6 \times 1 + 3 \times 1 + 2 \times 1 =$
25. $8 \times 1 + 2 \times 1 + 1 \times 1 =$
26. $3 \times 1 + 1 \times 1 + 2 \times 1 =$
27. $4 \times 1 + 2 \times 1 + 1 \times 1 =$
28. $5 \times 1 + 3 \times 1 + 1 \times 1 =$
29. $7 \times 1 + 1 \times 1 + 3 \times 1 =$
30. $8 \times 1 + 1 \times 1 + 2 \times 1 =$

$5 \times 2 = 10 \times 1$ $6 \times 2 =$

XIV = 14 XV =

LESSON XXXII.

1. $3 \times 1 + 2 \times 1 + 3 \times 1 =$
2. $4 \times 1 + 1 \times 1 + 3 \times 1 =$
3. $2 \times 1 + 3 \times 1 + 1 \times 1 =$
4. $4 \times 1 + 3 \times 1 + 2 \times 1 =$
5. $2 \times 1 + 2 \times 1 + 2 \times 1 =$
6. $5 \times 1 + 2 \times 1 + 3 \times 1 =$

7. $4 \times 1 + 6 \times 1 + 2 \times 1 =$
8. $3 \times 1 + 1 \times 1 + 3 \times 1 =$
9. $5 \times 1 + 2 \times 1 + 1 \times 1 =$
10. $6 \times 1 + 3 \times 1 + 2 \times 1 =$
11. $5 \times 1 + 4 \times 1 + 2 \times 1 =$
12. $2 \times 1 + 4 \times 1 + 1 \times 1 =$
13. $6 \times 1 + 2 \times 1 + 3 \times 1 =$
14. $7 \times 1 + 4 \times 1 + 1 \times 1 =$
15. $8 \times 1 + 2 \times 1 + 1 \times 1 =$
16. $3 \times 1 + 4 \times 1 + 1 \times 1 =$
17. $4 \times 1 + 1 \times 1 + 3 \times 1 =$
18. $2 \times 1 + 6 \times 1 + 3 \times 1 =$
19. $9 \times 1 + 1 \times 1 + 1 \times 1 =$
20. $3 \times 1 + 3 \times 1 + 3 \times 1 =$
21. $4 \times 1 + 2 \times 1 + 3 \times 1 =$
22. $6 \times 1 + 2 \times 1 + 2 \times 1 =$
23. $7 \times 1 + 3 \times 1 + 2 \times 1 =$
24. $3 \times 1 + 3 \times 1 + 6 \times 1 =$
25. $2 \times 1 + 5 \times 1 + 1 \times 1 =$
26. $5 \times 1 + 1 \times 1 + 1 \times 1 =$
27. $3 \times 1 + 3 \times 1 + 4 \times 1 =$
28. $7 \times 1 + 3 \times 1 + 1 \times 1 =$
29. $4 \times 1 + 1 \times 1 + 2 \times 1 =$
30. $8 \times 1 + 2 \times 1 + 1 \times 1 =$

XVI = 16 XVII = XVIII =
$7\times2=14\times1$ $8\times2=$

LESSON XXXIII.

Note: The form of question to be asked with example 2 below is, "One time 2 and 3 times 2 are how many times 1?" or simply, "are what?" The form of answer invariably required first of pupils is, "One time 2 and 3 times 2 are 4 times 2 or 8 times 1," thus reading "=" as equivalent to "or" (sometimes "which are").

1. $2\times2+1\times2=3\times2=6\times1$

2. $1\times2+3\times2=$
3. $4\times2+1\times2=$
4. $5\times2+2\times2=$
5. $3\times2+4\times2=$
6. $3\times2+3\times2=$
7 $1\times2+5\times2=$
8. $7\times2+2\times2=$
9. $4\times2+2\times2=$
10. $3\times2+2\times2=$
11. $5\times2+1\times2=$
12. $1\times2+4\times2=$
13. $7\times2+3\times2=$
14. $2\times2+2\times2=$
15 $1\times2+3\times2=$
16. $3\times2+2\times2=$
17. $9\times1+1\times2=$
18 $8\times2+2\times2=$
19. $6\times2+3\times2=$
20. $4\times2+4\times2=$
21. $5\times2+2\times2=$
22. $6\times2+2\times2=$
23. $7\times2+3\times2=$
24. $5\times2+5\times2=$
25. $4\times2+1\times2=$

26. $5\times2+4\times2=$

$9\times2=18\times1$ $10\times2=$ XIX$=19$

XX$=$

LESSON XXXIV.

General Note: III. The teacher introduces orally examples in concrete numbers, the pupils not being able yet to read them. The examples for pupils of this grade do not involve more than a single indicated multiplication, no addition being introduced into them. Every example in abstract numbers of a single indicated multiplication forms a basis for a corresponding example for practice in concrete numbers; thus, from the 2s, "If 2 boxes hold 2 potatoes each, how many potatoes do the boxes hold?" (or "the 2 boxes hold?" or, "they all hold?" or, "both hold?"). The pupils answer, "The boxes hold 2 times 2 potatoes, which are 4 times 1 potato;" or simply, "4 potatoes," for pupils may omit the form "times 1" at the close of an answer to an example in concrete numbers whenever they show a tendency to do so.

1. $4\times2+1\times2=5\times2=10\times1$

2. $3\times2+2\times2=$ 3. $4\times2+2\times2=$

4. $3\times2+4\times2=$
5. $5\times2+5\times1=$
6. $1\times2+3\times2=$
7. $6\times2+3\times2=$
8. $7\times2+1\times2=$
9. $4\times2+3\times2=$
10. $5\times2+2\times2=$
11. $1\times2+1\times2=$
12. $3\times2+3\times2=$
13. $4\times2+2\times2=$
14. $5\times2+3\times2=$
15. $1\times2+3\times2=$
16. $4\times2+1\times2=$
17. $8\times2+2\times2=$
18. $9\times2+1\times2=$
19. $7\times2+2\times2=$
20. $8\times6+5\times2=$
21. $4\times2+3\times2=$
22. $5\times2+1\times2=$
23. $8\times2+1\times2=$
24. $3\times2+6\times2=$
25. $4\times2+4\times2=$
26. $5\times2+1\times2=$
27. $3\times2+1\times2=$
28. $2\times2+2\times2=$
29. $6\times2+1\times2=$
30. $3\times2+3\times2=$

1. If 3 boys have 2 cents each, how many cents will they have? *Ans.* They will have 3×2 cents, which are 6 cents.

2. If 5 boys have 2 ears each, how many ears do they have? *Ans.* They have 5×2 ears, which are ten ears.

3. If 4 girls have 2 fingers each, how many fingers will they have? *Ans.* They will have 4×2 fingers, which are 8 fingers.

4. If 2 boys have 2 eyes each, how many eyes do they have?

5. If 7 cats have 2 noses each, how many noses will they have?

XXI = XXII =

LESSON XXXV.

1. $3 \times 1 + 4 \times 1 + 2 \times 1 =$
2. $4 \times 1 + 1 \times 1 + 3 \times 1 =$
3. $5 \times 1 + 2 \times 1 + 3 \times 1 =$
4. $6 \times 1 + 3 \times 1 + 2 \times 1 =$
5. $4 \times 1 + 4 \times 1 + 4 \times 1 =$
6. $5 \times 1 + 3 \times 1 + 1 \times 1 =$
7. $1 \times 1 + 5 \times 1 + 4 \times 1 =$
8. $2 \times 1 + 3 \times 1 + 5 \times 1 =$
9. $5 \times 1 + 2 \times 1 + 4 \times 1 =$
10. $2 \times 1 + 2 \times 1 + 2 \times 1 =$
11. $7 \times 1 + 1 \times 1 + 2 \times 1 =$
12. $4 \times 1 + 1 \times 1 + 2 \times 1 =$
13. $2 \times 1 + 3 \times 1 + 1 \times 1 =$
14. $4 \times 1 + 1 \times 1 + 3 \times 1 =$
15. $6 \times 1 + 3 \times 1 + 2 \times 1 =$
16. $3 \times 1 + 6 \times 1 + 3 \times 1 =$
17. $7 \times 1 + 2 \times 1 + 2 \times 1 =$

18. $8 \times 1 + 2 \times 1 + 1 \times 1 =$
19. $4 \times 1 + 6 \times 1 + 2 \times 1 =$
20. $5 \times 1 + 3 \times 1 + 4 \times 1 =$
21. $3 \times 1 + 7 \times 1 + 1 \times 1 =$
22. $8 \times 1 + 1 \times 1 + 1 \times 1 =$
23. $3 \times 1 + 4 \times 1 + 2 \times 1 =$
24. $6 \times 1 + 2 \times 1 + 3 \times 1 =$
25. $3 \times 1 + 3 \times 1 + 3 \times 1 =$
26. $4 \times 1 + 4 \times 1 + 4 \times 1 =$
27. $3 \times 1 + 6 \times 1 + 3 \times 1 =$
28. $4 \times 1 + 5 \times 1 + 2 \times 1 =$

1. $2 \times 2 + 3 \times 2 = 5 \times 2 = 10 \times 1$

2 $4 \times 2 + 1 \times 2 =$
3. $7 \times 2 + 3 \times 2 =$
4. $4 \times 2 + 2 \times 2 =$
5. $6 \times 2 + 2 \times 2 =$
6. $1 \times 2 + 5 \times 2 =$
7. $2 \times 2 + 4 \times 2 =$
8. $4 \times 2 + 3 \times 2 =$
9. $5 \times 2 + 5 \times 2 =$
10. $6 \times 2 + 3 \times 2 =$
11. $4 \times 2 + 5 \times 2 =$
12. $3 \times 2 + 1 \times 2 =$
13. $6 \times 2 + 1 \times 2 =$
14. $3 \times 2 + 3 \times 2 =$
15. $4 \times 2 + 1 \times 2 =$

16. $7 \times 2 + 1 \times 2 =$

XXIII = 23 XXIV =

LESSON XXXVI.

1. $3 \times 1 + 4 \times 1 + 2 \times 1 = 9 \times 1$ (or "9")

2. $4 \times 1 + 2 \times 1 + 1 \times 1 =$
3. $7 \times 1 + 3 \times 1 + 2 \times 1 =$
4. $3 \times 1 + 3 \times 1 + 3 \times 1 =$
5. $4 \times 1 + 2 \times 1 + 2 \times 1 =$
6. $3 \times 1 + 3 \times 1 + 6 \times 1 =$
7. $4 \times 1 + 4 \times 1 + 4 \times 1 =$
8. $3 \times 1 + 4 \times 1 + 5 \times 1 =$
9. $4 \times 1 + 3 \times 1 + 2 \times 1 =$
10. $8 \times 1 + 2 \times 1 + 2 \times 1 =$
11. $4 \times 1 + 1 \times 1 + 4 \times 1 =$
12. $3 \times 1 + 6 \times 1 + 3 \times 1 =$
13. $4 \times 1 + 1 \times 1 + 3 \times 1 =$
14. $3 \times 1 + 2 \times 1 + 2 \times 1 =$
15. $2 \times 1 + 2 \times 1 + 3 \times 1 =$
16. $5 \times 1 + 4 \times 1 + 1 \times 1 =$
17. $6 \times 1 + 1 \times 1 + 4 \times 1 =$
18. $3 \times 1 + 1 \times 1 + 6 \times 1 =$
19. $4 \times 1 + 3 \times 1 + 1 \times 1 =$
20. $5 \times 1 + 1 \times 1 + 5 \times 1 =$
21. $1 \times 1 + 3 \times 1 + 3 \times 1 =$
22. $5 \times 1 + 1 \times 1 + 1 \times 1 =$
23. $6 \times 1 + 3 \times 1 + 2 \times 1 =$
24. $3 \times 1 + 1 \times 1 + 2 \times 1 =$
25. $6 \times 1 + 2 \times 1 + 2 \times 1 =$

26. $4\times1+1\times1+3\times1=$

27. $3\times1+3\times1+3\times1=$

1. $4\times2+6\times2=10\times2=20\times1$ (or "20")

2. $4\times2+5\times2=$

3. $4\times2+3\times2=$

4. $1\times2+3\times2=$

5. $3\times2+3\times2=$

6. $5\times2+2\times2=$

7. $7\times2+1\times2=$

8. $2\times2+4\times2=$

9. $3\times2+1\times2=$

10. $6\times2+3\times2=$

11. $7\times2+1\times2=$

12. $5\times2+2\times2=$

13. $6\times2+4\times2=$

14. $3\times2+5\times2=$

15. $4\times2+4\times2=$

1. If 5 boys have 2 hands each, how many hands do they have? *Ans.* They have 5×2 hands, which are 10 hands.

2. If 9 chairs have 2 legs each, how many legs will they have?

3. If 7 girls have 1 mouth each, how many mouths do they have?

4. If 8 girls have 2 apples each, how many apples will they have?

5. If 10 boys have 2 marbles each, how many marbles will they have?

LESSON XXXVII.

GENERAL NOTES: IV. The teacher will occasionally dictate rapidly to the class for slate work examples in indicated multiplication. The children write $2\times2=4\times1$, in answer to the question, "Two times 2 are how many times 1?" The purpose of this exercise is to secure from pupils uniform rapidity of execution.

V. Throughout the rest of the year, the children frequently make examples in concrete numbers, instead of the teacher, calling upon each other to answer the questions. The purpose of this course is to make pupils master of the arithmetical forms of concrete numbers as well as those of abstract numbers. (See Note III, lesson XXXIV, for the form of answer required.

1. $4\times2+3\times2=7\times2=14\times1$ (or "14")
2. $7\times2+1\times2=$
3. $3\times2+1\times2=$
4. $4\times2+4\times2=$
5. $7\times2+2\times2=$
6. $5\times2+3\times2=$
7. $8\times2+1\times2=$
8. $4\times2+1\times2=$
9. $5\times2+2\times2=$
10. $3\times2+4\times2=$
11. $7\times2+3\times2=$
12. $4\times2+2\times2=$
13. $3\times2+3\times2=$
14. $1\times2+1\times2=$
15. $2\times2+1\times2=$
16. $4\times2+1\times2=$
17. $6\times2+3\times2=$

18. $4\times2+5\times2=$

19. $6\times2+1\times2=$

20. $5\times2+2\times2=$

21. $7\times2+1\times2=$

22. $6\times2+1\times2=$

23. $3\times2+1\times2=$

24. $1\times2+5\times2=$

25. $5\times2+1\times2=$

26. $3\times2+1\times2=$

27. $1\times2+7\times2=$

28. $5\times2+5\times2=$

29. $3\times2+3\times2=$

$7\times2=14\times1$ $4\times2=$ $6\times2=$

$8\times2=$ $10\times2=$ $9\times2=$

$2\times2=$ $5\times2=$ $3\times2=$

XXV=25 XXVI=

1. If 9 boxes have 2 sides each, how many sides will they have? *Ans.* They will have 9×2 sides, which are 18 sides.

2. If 7 books have 2 leaves each, how many leaves will they have?

3. If 2 girls have 8 cents each, how many cents will they have?

4. If 5 girls have 2 boxes each, how many boxes will they have?

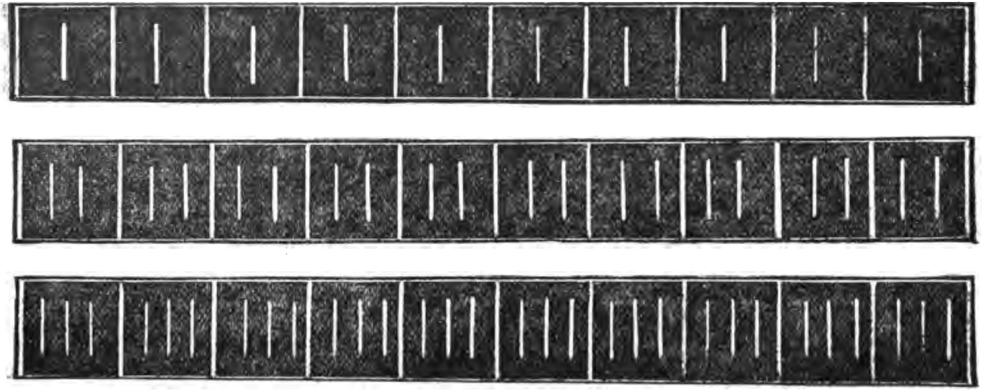
5. If 7 cats have two ears each, how many ears do they have?

LESSON XXXVIII.

$1\times3=3\times1$ $2\times3=$ $3\times3=$ $4\times3=$ $5\times3=$

ARITHMETICAL CHART.

FIGURE 3. The 1s, 2s, and 3s. [See Directions. Fig. 1, page 6.]



1. $2\times3+1\times3=3\times3=9\times1$ (or "9")
2. $2\times3+2\times3=$
3. $1\times3+2\times3=$
4. $3\times3+1\times3=$
5. $3\times3+3\times3=$
6. $1\times3+2\times3=$
7. $2\times2+4\times2=$
8. $3\times2+4\times2=$
9. $4\times2+5\times2=$
10. $6\times2+1\times2=$
11. $4\times2+4\times2=$
12. $5\times2+3\times1=$
13. $6\times2+2\times2=$
14. $5\times2+2\times2=$
15. $3\times2+4\times2+2\times2=$
16. $4\times2+1\times2+2\times2=$
17. $3\times2+1\times2+2\times2=$
18. $5\times2+2\times2+2\times2=$
19. $3\times2+4\times2+1\times2=$
20. $4\times2+2\times2+3\times2=$
21. $6\times2+3\times2+1\times2=$
22. $3\times2+4\times2+1\times2=$
23. $2\times2+2\times2+2\times2=$
24. $3\times2+3\times2+3\times2=$
25. $5\times2+2\times2+3\times2=$
26. $4\times2+1\times2+1\times2=$
27. $2\times2+3\times2+1\times2=$
28. $7\times2+1\times2+1\times2=$
29. $6\times2+1\times2+2\times2=$

XXVII=27　　**XXVIII=**　　**XXIX=**

LESSON XXXIX.

1. $3 \times 2 + 3 \times 2 + 2 \times 2 = 8 \times 2 = 16 \times 1$
2. $1 \times 2 + 4 \times 2 + 3 \times 2 =$
3. $1 \times 2 + 1 \times 2 + 3 \times 2 =$
4. $5 \times 2 + 1 \times 2 + 2 \times 2 =$
5. $4 \times 2 + 3 \times 2 + 2 \times 2 =$
6. $3 \times 2 + 3 \times 2 + 3 \times 2 =$
7. $2 \times 2 + 1 \times 2 + 3 \times 2 =$
8. $7 \times 2 + 2 \times 2 + 1 \times 2 =$
9. $3 \times 2 + 2 \times 2 + 4 \times 2 =$
10. $5 \times 2 + 1 \times 2 + 1 \times 2 =$
11. $1 \times 2 + 2 \times 2 + 3 \times 2 =$
12. $4 \times 2 + 3 \times 2 + 2 \times 2 =$
13. $6 \times 2 + 1 \times 2 + 2 \times 2 =$
14. $3 \times 2 + 4 \times 2 + 1 \times 2 =$
15. $2 \times 2 + 1 \times 2 + 2 \times 2 =$
16. $3 \times 3 + 3 \times 3 =$
17. $4 \times 2 + 2 \times 2 =$
18. $2 \times 3 + 4 \times 3 =$
19. $4 \times 3 + 1 \times 3 =$
20. $3 \times 3 + 2 \times 3 =$
21. $5 \times 3 + 3 \times 3 =$
22. $4 \times 3 + 2 \times 2 =$
23. $2 \times 3 + 3 \times 3 =$
24. $1 \times 3 + 1 \times 3 =$
25. $5 \times 3 + 2 \times 3 =$
26. $4 \times 3 + 3 \times 3 =$
27. $3 \times 3 + 1 \times 3 =$

$6 \times 3 = 18 \times 1$ $7 \times 3 =$ $8 \times 3 =$

XXX=30 XXXI=

1. If 7 boys have three marbles each, how many marbles have they?

2. If 5 cats have two heads each, how many heads will they have?

3. If 6 girls have three pencils each, how many pencils have they?

4. If 4 girls have 3 boxes each, how many boxes will they have?

5 If 9 boys have 2 cents each, how many cents will they have?

LESSON XL.

1. $4 \times 2 + 3 \times 2 + 1 \times 2 = 8 \times 2 = 16 \times 1$
2. $3 \times 2 + 3 \times 2 + 3 \times 2 =$
3. $1 \times 2 + 3 \times 2 + 3 \times 2 =$
4. $2 \times 2 + 5 \times 2 + 2 \times 2 =$
5. $3 \times 2 + 4 \times 2 + 2 \times 2 =$
6. $1 \times 2 + 1 \times 2 + 3 \times 2 =$
7. $2 \times 2 + 3 \times 2 + 2 \times 2 =$
8. $3 \times 2 + 1 \times 2 + 3 \times 2 =$
9. $4 \times 2 + 2 \times 2 + 3 \times 2 =$
10. $3 \times 2 + 1 \times 2 + 3 \times 2 =$

11. $3 \times 3 + 2 \times 3 =$ 13. $4 \times 3 + 3 \times 3 =$

12 $2 \times 3 + 1 \times 3 =$ 14. $7 \times 2 + 3 \times 3 =$

15. $6\times3+2\times3=$
16. $5\times3+3\times3=$
17. $8\times3+2\times3=$
18. $4\times3+4\times3=$
19. $5\times3+2\times3=$
20. $7\times3+2\times3=$
21. $7\times2+3\times2=$
22. $4\times2+5\times2=$
23. $6\times2+1\times2=$
24. $4\times2+4\times2=$
25. $3\times2+2\times2=$
26. $4\times2+1\times2=$
27. $5\times2+3\times2=$

$9\times3=27\times1$ $10\times3=$

XXXII=32 XXXIII=

LESSON XLI.

1. $2\times1+3\times1+2\times1=$
2. $4\times1+1\times1+1\times1=$
3. $3\times1+3\times1+3\times1=$
4. $1\times1+4\times1+5\times1=$
5. $2\times1+2\times1+1\times1=$
6. $7\times1+1\times1+2\times1=$
7. $5\times1+1\times1+1\times1=$
8. $3\times1+2\times1+5\times1=$
9. $5\times1+2\times1+7\times1=$
10. $3\times1+2\times1+1\times1=$
11. $4\times1+3\times1+2\times1=$
12. $6\times1+1\times1+1\times1=$
13. $1\times1+2\times1+3\times1=$

14. $8\times1+2\times1+2\times1=$
15. $3\times1+2\times1+6\times1=$
16. $7\times1+4\times1+1\times1=$
17. $8\times1+2\times1+3\times1=$
18. $4\times1+2\times1+5\times1=$
19. $3\times1+5\times1+4\times1=$
20. $4\times1+3\times1+6\times1=$
21. $3\times1+1\times1+7\times1=$
22. $7\times1+2\times1+2\times1=$
23. $2\times1+2\times1+8\times1=$
24. $2\times1+3\times1+4\times1=$
25. $3\times1+7\times1+3\times1=$
26. $7\times1+2\times1+2\times1=$
27. $8\times1+3\times1+2\times1=$

1. $3\times3+4\times3=7\times3=21\times1$
2. $5\times3+4\times3=$
3. $3\times3+6\times3=$
4. $4\times3+4\times3=$
5. $6\times3+4\times3=$
6. $2\times3+3\times3=$
7. $4\times3+2\times3=$
8. $8\times3+1\times3=$

XXXIV=34

9. $7\times2+3\times2=$
10. $4\times2+3\times2=$
11. $5\times3+3\times2=$
12. $4\times2+4\times2=$
13. $6\times2+3\times2=$
14. $2\times2+1\times2=$
15. $3\times2+2\times2=$

XXXV=

LESSON XLII.

1. $2 \times 3 + 4 \times 3 + 3 \times 3 = 9 \times 3 = 27 \times 1$
2. $1 \times 3 + 2 \times 3 + 3 \times 3 =$
3. $2 \times 3 + 3 \times 3 + 3 \times 3 =$
4. $5 \times 3 + 1 \times 3 + 2 \times 3 =$
5. $6 \times 3 + 1 \times 3 + 2 \times 3 =$
6. $7 \times 3 + 1 \times 3 + 2 \times 3 =$
7. $2 \times 3 + 2 \times 3 + 3 \times 3 =$
8. $3 \times 3 + 4 \times 3 + 1 \times 3 =$
9. $4 \times 3 + 4 \times 3 + 2 \times 3 =$
10. $2 \times 3 + 5 \times 3 + 1 \times 3 =$
11. $1 \times 3 + 1 \times 3 + 1 \times 3 =$
12. $5 \times 3 + 2 \times 3 + 3 \times 3 =$
13. $3 \times 3 + 3 \times 3 + 3 \times 3 =$
14. $2 \times 3 + 2 \times 3 + 2 \times 3 =$
15. $2 \times 3 + 5 \times 3 + 1 \times 3 =$
16. $3 \times 2 + 2 \times 2 + 3 \times 2 =$
17. $4 \times 2 + 3 \times 2 + 1 \times 2 =$
18. $4 \times 2 + 4 \times 2 + 1 \times 2 =$
19. $5 \times 2 + 2 \times 2 + 2 \times 2 =$
20. $3 \times 2 + 1 \times 2 + 3 \times 2 =$
21. $7 \times 2 + 1 \times 2 + 1 \times 2 =$
22. $4 \times 2 + 3 \times 2 + 2 \times 2 =$

23. $2 \times 2 + 2 \times 2 + 1 \times 2 =$
24. $4 \times 2 + 1 \times 2 + 2 \times 2 =$
25. $3 \times 2 + 3 \times 2 + 1 \times 2 =$
26. $6 \times 2 + 1 \times 2 + 1 \times 2 =$
27. $3 \times 2 + 3 \times 2 + 3 \times 2 =$
28. $2 \times 2 + 2 \times 2 + 2 \times 2 =$

1. $5 \times 2 + 4 \times 2 =$
2. $1 \times 2 + 3 \times 2 =$
3. $4 \times 2 + 1 \times 2 =$
4. $5 \times 2 + 2 \times 2 =$
5. $3 \times 2 + 4 \times 2 =$
6. $3 \times 2 + 3 \times 2 =$
7. $1 \times 2 + 5 \times 2 =$
8. $7 \times 2 + 2 \times 2 =$
9. $4 \times 2 + 2 \times 2 =$
10. $3 \times 2 + 2 \times 2 =$
11. $5 \times 2 + 1 \times 2 =$
12. $1 \times 2 + 4 \times 2 =$
13. $7 \times 2 + 3 \times 2 =$
14. $7 \times 2 + 3 \times 2 =$
15. $2 \times 2 + 2 \times 2 =$
16. $1 \times 2 + 3 \times 2 =$
17. $3 \times 2 + 2 \times 2 =$
18. $9 \times 2 + 1 \times 2 =$
19 $8 \times 2 + 2 \times 2 =$
20. $6 \times 2 + 3 \times 2 =$
21. $4 \times 2 + 4 \times 2 =$
22. $5 \times 2 + 2 \times 2 =$
23. $6 \times 2 + 2 \times 2 =$
24. $7 \times 2 + 3 \times 2 =$
25. $5 \times 2 + 5 \times 2 =$
26. $4 \times 2 + 1 \times 2 =$
27. $9 \times 1 + 3 \times 1 =$

XXXVI=36

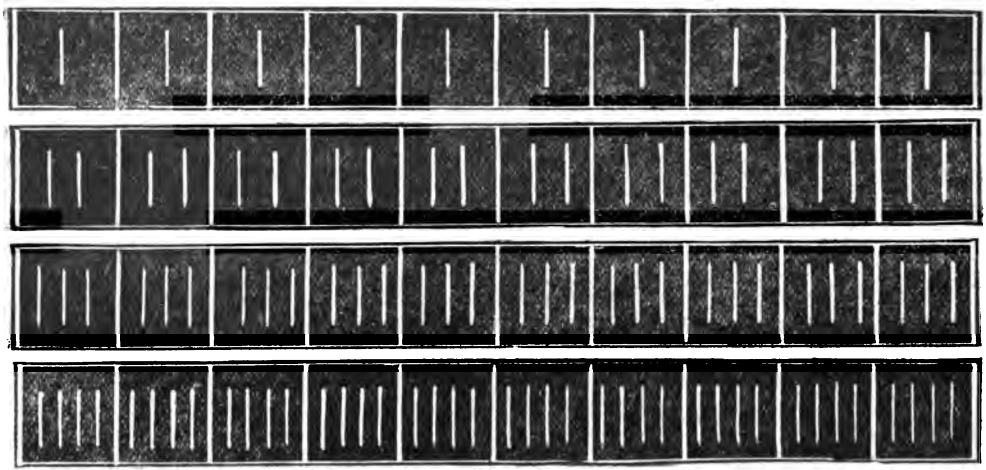
XXXVII=

LESSON XLIII.

$3 \times 1 + 4 \times 1 + 4 \times 1 =$

ARITHMETICAL CHART.

FIGURE 4. The 1s, 2s, 3s, and 4s. [See Directions, Fig. 1, page 6.]



2. $6 \times 1 + 5 \times 1 + 2 \times 1 =$
3. $3 \times 1 + 4 \times 1 + 4 \times 1 =$
4. $4 \times 1 + 4 \times 1 + 4 \times 1 =$
5. $3 \times 1 + 4 \times 1 + 6 \times 1 =$
6. $4 \times 1 + 4 \times 1 + 5 \times 1 =$
7. $5 \times 1 + 4 \times 1 + 4 \times 1 =$
8. $3 \times 1 + 2 \times 1 + 6 \times 1 =$
9. $5 \times 1 + 4 \times 1 + 3 \times 1 =$
10. $3 \times 1 + 3 \times 1 + 6 \times 1 =$
11. $2 \times 3 + 3 \times 3 + 3 \times 3 =$
12. $6 \times 3 + 1 \times 3 + 2 \times 3 =$
13. $3 \times 3 + 3 \times 3 + 1 \times 3 =$
14. $2 \times 3 + 1 \times 3 + 2 \times 3 =$
15. $3 \times 3 + 2 \times 3 + 1 \times 3 =$
16. $4 \times 3 + 2 \times 3 + 2 \times 3 =$
17. $7 \times 3 + 1 \times 3 + 2 \times 3 =$
18. $2 \times 3 + 3 \times 3 + 3 \times 3 =$
19. $2 \times 2 + 3 \times 2 + 2 \times 3 =$
20. $3 \times 2 + 3 \times 2 + 3 \times 2 =$
21. $7 \times 2 + 1 \times 2 + 1 \times 2 =$
22. $3 \times 2 + 1 \times 2 + 1 \times 2 =$
23. $3 \times 2 + 2 \times 2 + 2 \times 2 =$
24. $4 \times 2 + 1 \times 2 + 2 \times 2 =$
25. $3 \times 2 + 1 \times 2 + 1 \times 2 =$

26. $3 \times 2 + 4 \times 2 + 3 \times 2 =$

$1 \times 4 = 4 \times 1$

$2 \times 4 =$

$3 \times 4 =$

XXXVIII=38

XXXIX=

1. If 7 boys have 2 eyes each, how many eyes have they?

2. If 8 cats have 2 ears each, how many ears have they?

3. If 5 boys have 3 books each, how many books have they?

4. If 7 girls have 3 apples each, how many apples have they?

5. If 9 girls have 3 oranges each, how many oranges have they?

LESSON XLIV.

1. $4 \times 1 + 5 \times 1 =$
2. $5 \times 1 + 6 \times 1 =$
3. $3 \times 1 + 7 \times 1 =$
4. $8 \times 1 + 4 \times 1 =$
5. $9 \times 1 + 4 \times 1 =$
6. $7 \times 1 + 5 \times 1 =$
7. $6 \times 1 + 6 \times 1 =$
8. $7 \times 1 + 4 \times 1 =$
9. $8 \times 1 + 5 \times 1 =$
10. $7 \times 1 + 6 \times 1 =$
11. $11 \times 1 + 1 \times 1 =$
12. $10 \times 1 + 3 \times 1 =$
13. $11 \times 1 + 2 \times 1 =$
14. $8 \times 1 + 6 \times 1 =$
15. $10 \times 1 + 4 \times 1 =$
16. $3 \times 1 + 3 \times 1 + 7 \times 1 =$

17. $4 \times 1 + 3 \times 1 + 5 \times 1 =$

18. $2 \times 1 + 6 \times 1 + 5 \times 1 =$

19. $3 \times 1 + 6 \times 1 + 4 \times 1 =$

20. $4 \times 1 + 4 \times 1 + 6 \times 1 =$

21. $3 \times 1 + 7 \times 1 + 2 \times 1 =$

22. $3 \times 1 + 3 \times 1 + 6 \times 1 =$

23. $3 \times 1 + 2 \times 1 + 6 \times 1 =$

24. $1 \times 1 + 6 \times 1 + 5 \times 1 =$

25. $6 \times 1 + 2 \times 1 + 4 \times 1 =$

26. $3 \times 1 + 3 \times 1 + 8 \times 1 =$

27. $5 \times 1 + 5 \times 1 + 4 \times 1 =$

28. $3 \times 1 + 7 \times 1 + 3 \times 1 =$

$4 \times 4 = 16 \times 1$ $5 \times 4 =$

XL=40 XLI=

1. $3 \times 2 + 4 \times 2 + 2 \times 2 = 9 \times 2 = 18 \times 1$

2. $3 \times 2 + 1 \times 2 + 2 \times 2 =$

3. $2 \times 2 + 3 \times 2 + 3 \times 2 =$

4. $4 \times 2 + 2 \times 2 + 3 \times 2 =$

5. $6 \times 2 + 1 \times 2 + 3 \times 2 =$

6. $3 \times 2 + 3 \times 2 + 3 \times 2 =$

7. $4 \times 2 + 1 \times 2 + 2 \times 2 =$

8. $3 \times 2 + 3 \times 2 + 2 \times 2 =$

9. $3 \times 3 + 2 \times 3 + 2 \times 3 =$

10. $2 \times 3 + 5 \times 3 + 1 \times 3 =$

11. $4 \times 3 + 2 \times 3 + 2 \times 3 =$
12. $1 \times 3 + 2 \times 3 + 3 \times 3 =$
13. $3 \times 3 + 5 \times 3 + 2 \times 3 =$
14. $4 \times 3 + 2 \times 3 + 3 \times 3 =$
15. $5 \times 3 + 1 \times 3 + 2 \times 3 =$
16. $7 \times 3 + 1 \times 3 + 1 \times 3 =$
17. $3 \times 3 + 2 \times 3 + 2 \times 3 =$

LESSON XLV.

1. $3 \times 2 + 4 \times 2 + 2 \times 2 = 9 \times 2 = 18 \times 1$
2. $2 \times 2 + 2 \times 2 + 1 \times 2 =$
3. $3 \times 2 + 2 \times 2 + 2 \times 2 =$
4. $5 \times 2 + 1 \times 2 + 1 \times 2 =$
5. $3 \times 2 + 4 \times 2 + 2 \times 2 =$
6. $5 \times 2 + 1 \times 2 + 3 \times 2 =$
7. $7 \times 2 + 1 \times 2 + 2 \times 2 =$
8. $1 \times 2 + 4 \times 2 + 1 \times 2 =$
9. $8 \times 2 + 1 \times 2 + 1 \times 2 =$
10. $3 \times 2 + 3 \times 2 + 3 \times 2 =$
11. $4 \times 3 + 2 \times 3 + 1 \times 3 =$
12. $3 \times 3 + 5 \times 3 + 1 \times 3 =$
13. $2 \times 3 + 1 \times 3 + 2 \times 3 =$
14. $3 \times 3 + 2 \times 3 + 2 \times 3 =$
15. $4 \times 3 + 2 \times 3 + 2 \times 3 =$

16. $5 \times 3 + 1 \times 3 + 2 \times 3 =$

17. $7 \times 3 + 1 \times 3 + 2 \times 3 =$

18. $8 \times 3 + 1 \times 3 + 1 \times 3 =$

19. $5 \times 3 + 3 \times 3 + 2 \times 3 =$

20. $2 \times 3 + 1 \times 3 + 4 \times 3 =$

21. $4 \times 3 + 2 \times 3 + 4 \times 3 =$

22. $1 \times 4 + 1 \times 4 + 1 \times 4 =$

23. $2 \times 4 + 1 \times 4 + 2 \times 4 =$

24. $1 \times 4 + 2 \times 4 + 1 \times 4 =$

25. $3 \times 4 + 1 \times 4 + 1 \times 4 =$

26. $1 \times 4 + 1 \times 4 + 2 \times 4 =$

27. $2 \times 4 + 2 \times 4 + 1 \times 4 =$

$6 \times 4 = 24 \times 1$ $7 \times 4 =$

XLII=42 XLIII=

1. If 6 boys have 4 boxes each, how many boxes have they?

2. If 7 girls have 3 pears each, how many pears have they?

3. If 9 boys have 2 balls each, how many balls have they?

4. If there are 4 marbles in 1 box, how many marbles are there in 7 boxes?

5. If 8 boys have 3 books each, how many books have they?

LESSON XLVI.

1. $4 \times 1 + 6 \times 1 + 4 \times 1 =$
2. $3 \times 1 + 4 \times 1 + 2 \times 1 =$
3. $7 \times 1 + 2 \times 1 + 4 \times 1 =$
4. $8 \times 1 + 3 \times 1 + 2 \times 1 =$
5. $3 \times 1 + 4 \times 1 + 6 \times 1 =$
6. $7 \times 1 + 3 \times 1 + 5 \times 1 =$
7. $4 \times 1 + 5 \times 1 + 3 \times 1 =$
8. $3 \times 1 + 5 \times 1 + 6 \times 1 =$
9. $5 \times 1 + 4 \times 1 + 5 \times 1 =$
10. $3 \times 1 + 6 \times 1 + 4 \times 1 =$
11. $3 \times 1 + 4 \times 1 + 7 \times 1 =$
12. $3 \times 1 + 5 \times 1 + 7 \times 1 =$
13. $3 \times 1 + 4 \times 1 + 8 \times 1 =$
14. $3 \times 4 + 1 \times 4 + 2 \times 4 =$
15. $2 \times 4 + 2 \times 4 + 1 \times 4 =$
16. $3 \times 4 + 1 \times 4 + 3 \times 4 =$
17. $1 \times 4 + 2 \times 4 + 1 \times 4 =$
18. $2 \times 4 + 1 \times 4 + 3 \times 4 =$
19. $2 \times 4 + 3 \times 4 + 2 \times 4 =$
20. $3 \times 3 + 2 \times 3 + 3 \times 3 =$
21. $4 \times 3 + 1 \times 3 + 3 \times 3 =$
22. $3 \times 3 + 3 \times 3 + 3 \times 3 =$
23. $4 \times 3 + 2 \times 3 + 1 \times 3 =$

24. $2 \times 3 + 2 \times 3 + 4 \times 3 =$
25. $2 \times 3 + 5 \times 3 + 3 \times 3 =$
26. $2 \times 2 + 5 \times 2 + 1 \times 2 =$
27. $3 \times 2 + 4 \times 2 + 2 \times 2 =$
28. $2 \times 2 + 6 \times 2 + 1 \times 2 =$

$8 \times 4 = 32 \times 1$ $9 \times 4 =$ $10 \times 4 =$

XLIV=44 XLV=

LESSON XLVII.

Oral Work.

1. $2 \times 4 + 3 \times 4 + 4 \times 4 =$
2. $1 \times 4 + 3 \times 4 + 4 \times 4 =$
3. $3 \times 4 + 5 \times 4 + 2 \times 4 =$
4. $5 \times 4 + 2 \times 4 + 2 \times 4 =$
5. $4 \times 4 + 1 \times 4 + 1 \times 4 =$
6. $3 \times 4 + 3 \times 4 + 3 \times 4 =$
7. $1 \times 4 + 1 \times 4 + 1 \times 4 =$
8. $2 \times 4 + 1 \times 4 + 2 \times 4 =$
9. $3 \times 3 + 4 \times 3 + 3 \times 3 =$
10. $4 \times 3 + 1 \times 3 + 3 \times 3 =$
11. $5 \times 3 + 1 \times 3 + 4 \times 3 =$
12. $4 \times 3 + 1 \times 3 + 2 \times 3 =$
13. $2 \times 3 + 2 \times 3 + 1 \times 3 =$
14. $7 \times 3 + 1 \times 3 + 1 \times 3 =$

15. $2 \times 3 + 3 \times 3 + 3 \times 3 =$
16. $4 \times 3 + 4 \times 3 + 1 \times 3 =$
17. $7 \times 3 + 2 \times 3 + 1 \times 3 =$
18. $3 \times 2 + 4 \times 2 + 1 \times 2 =$
19. $4 \times 2 + 1 \times 2 + 3 \times 2 =$
20. $2 \times 2 + 2 \times 2 + 1 \times 2 =$
21. $3 \times 2 + 1 \times 2 + 2 \times 2 =$
22. $2 \times 2 + 4 \times 2 + 3 \times 2 =$
23. $3 \times 2 + 4 \times 2 + 1 \times 2 =$
24. $3 \times 2 + 1 \times 2 + 3 \times 2 =$
25. $4 \times 2 + 3 \times 2 + 1 \times 2 =$

1. $6 \times 1 + 7 \times 1 =$
2. $9 \times 1 + 4 \times 1 =$
3. $8 \times 1 + 5 \times 1 =$
4. $4 \times 1 + 7 \times 1 =$
5. $9 \times 1 + 5 \times 1 =$
6. $8 \times 1 + 6 \times 1 =$

XLVI=46

7. $7 \times 1 + 5 \times 1 =$
8. $7 \times 1 + 8 \times 1 =$
9. $9 \times 1 + 6 \times 1 =$
10. $8 \times 1 + 4 \times 1 =$
11. $7 \times 1 + 5 \times 1 =$
12. $6 \times 1 + 6 \times 1 =$

XLVII=

LESSON XLVIII.

1. If there are 4 apples in 1 box, how many apples are there in 4 boxes?

2. If it takes 3 nails to make 1 box, how many nails will it take to make 9 boxes?

3. If 8 boys have 4 cents each, how many cents have they?

4. If 1 book cost 3 cents, how many cents will 4 books cost?

5. If 10 boys have 4 marbles each, how many marbles have they?

1. $3 \times 1 + 6 \times 1 + 5 \times 1 =$
2. $6 \times 1 + 3 \times 1 + 3 \times 1 =$
3. $4 \times 1 + 4 \times 1 + 6 \times 1 =$
4. $3 \times 1 + 4 \times 1 + 6 \times 1 =$
5. $5 \times 1 + 6 \times 1 + 4 \times 1 =$
6. $6 \times 1 + 6 \times 1 + 2 \times 1 =$
7. $5 \times 1 + 3 \times 1 + 7 \times 1 =$
8. $4 \times 1 + 5 \times 1 + 3 \times 1 =$
9. $5 \times 1 + 5 \times 1 + 5 \times 1 =$
10. $6 \times 1 + 3 \times 1 + 6 \times 1 =$
11. $7 \times 1 + 5 \times 1 + 3 \times 1 =$
12. $6 \times 1 + 5 \times 1 + 4 \times 1 =$
13. $7 \times 1 + 3 \times 1 + 5 \times 1 =$
14. $3 \times 1 + 5 \times 1 + 4 \times 1 =$
15. $4 \times 1 + 3 \times 1 + 5 \times 1 =$
16. $3 \times 4 + 2 \times 4 + 4 \times 4 =$
17. $2 \times 4 + 1 \times 4 + 4 \times 4 =$

18. $2 \times 4 + 2 \times 4 + 1 \times 4 =$
19. $3 \times 4 + 4 \times 4 + 3 \times 4 =$
20. $3 \times 3 + 2 \times 3 + 2 \times 3 =$
21. $2 \times 3 + 1 \times 3 + 4 \times 3 =$
22. $4 \times 3 + 2 \times 3 + 3 \times 3 =$
23. $3 \times 2 + 4 \times 2 + 3 \times 2 =$
24. $2 \times 2 + 4 \times 2 + 2 \times 2 =$
25. $1 \times 2 + 3 \times 2 + 4 \times 2 =$

XLVIII=48 XLIX=

LESSON XLIX.

1. $4 \times 1 + 5 \times 1 + 6 \times 1 =$
2. $7 \times 1 + 2 \times 1 + 5 \times 1 =$
3. $3 \times 1 + 5 \times 1 + 6 \times 1 =$
4. $4 \times 1 + 3 \times 1 + 7 \times 1 =$
5. $3 \times 1 + 6 \times 1 + 6 \times 1 =$
6. $4 \times 1 + 4 \times 1 + 7 \times 1 =$
7. $3 \times 1 + 2 \times 1 + 6 \times 1 =$
8. $3 \times 1 + 2 \times 1 + 6 \times 1 =$
9. $7 \times 1 + 3 \times 1 + 5 \times 1 =$
10. $4 \times 1 + 2 \times 1 + 3 \times 1 =$
11. $3 \times 1 + 4 \times 1 + 5 \times 1 =$
12. $5 \times 1 + 3 \times 1 + 4 \times 1 =$
13. $6 \times 1 + 5 \times 1 + 5 \times 1 =$

14. $3 \times 1 + 2 \times 1 + 6 \times 1 =$
15. $5 \times 1 + 4 \times 1 + 7 \times 1 =$
16. $5 \times 1 + 2 \times 1 + 4 \times 1 =$
17. $5 \times 1 + 3 \times 1 + 8 \times 1 =$
18. $6 \times 1 + 6 \times 1 + 3 \times 1 =$
19. $2 \times 1 + 7 \times 1 + 4 \times 1 =$
20. $7 \times 1 + 3 \times 1 + 6 \times 1 =$
21. $2 \times 1 + 3 \times 1 + 7 \times 1 =$
22. $6 \times 1 + 7 \times 1 + 3 \times 1 =$
23. $3 \times 1 + 7 \times 1 + 2 \times 1 =$
24. $8 \times 1 + 6 \times 1 + 2 \times 1 =$

1. $4 \times 4 + 5 \times 4 = 9 \times 4 = 36 \times 1$ (or “36”)
2. $6 \times 4 + 1 \times 4 =$
3. $3 \times 4 + 2 \times 4 =$
4. $7 \times 4 + 3 \times 4 =$
5. $3 \times 4 + 1 \times 4 =$
6. $4 \times 4 + 2 \times 4 =$
7. $3 \times 4 + 4 \times 4 =$
8. $5 \times 4 + 4 \times 4 =$
9. $5 \times 4 + 5 \times 4 =$
10. $6 \times 3 + 2 \times 3 =$
11. $4 \times 3 + 3 \times 3 =$
12. $7 \times 3 + 3 \times 3 =$
13. $6 \times 3 + 1 \times 3 =$
14. $4 \times 3 + 1 \times 3 =$
15. $2 \times 3 + 1 \times 3 =$
16. $5 \times 3 + 2 \times 3 =$
17. $6 \times 3 + 2 \times 3 =$
18. $4 \times 2 + 5 \times 2 =$
19. $3 \times 2 + 1 \times 2 =$
20. $5 \times 2 + 3 \times 2 =$
21. $4 \times 2 + 2 \times 2 =$
22. $4 \times 2 + 3 \times 2 =$
23. $3 \times 2 + 2 \times 2 =$
24. $4 \times 2 + 4 \times 2 =$

LESSON L.

1. If there are 4 oranges in 1 box, how many oranges are there in 9 boxes?

2. If there are 3 cents in 1 pile, how many cents are there in 8 piles?

3. If 10 boys have 4 cents each, how many cents have they?

4. If 1 girl spends 4 cents, how many cents will 7 girls spend?

5. If 1 boy eat 2 apples, how many apples will 8 boys eat?

1. $3 \times 3 + 3 \times 3 + 3 \times 3 =$
2. $4 \times 4 + 2 \times 4 + 1 \times 4 =$
3. $2 \times 3 + 5 \times 3 + 1 \times 3 =$
4. $2 \times 2 + 4 \times 2 + 3 \times 2 =$
5. $6 \times 2 + 1 \times 2 + 3 \times 2 =$
6. $3 \times 2 + 4 \times 2 + 2 \times 2 =$
7. $5 \times 4 + 2 \times 4 + 1 \times 4 =$
8. $3 \times 3 + 4 \times 3 + 1 \times 3 =$
9. $2 \times 3 + 1 \times 3 + 4 \times 3 =$
10. $4 \times 2 + 5 \times 2 + 1 \times 2 =$
11. $3 \times 4 + 4 \times 4 + 2 \times 4 =$
12. $2 \times 4 + 1 \times 4 + 2 \times 4 =$

13. $3 \times 4 + 2 \times 4 + 3 \times 4 =$
14. $2 \times 2 + 2 \times 2 + 2 \times 2 =$
15. $4 \times 3 + 1 \times 3 + 1 \times 3 =$

1. $9 \times 1 + 6 \times 1 =$
2. $8 \times 1 + 5 \times 1 =$
3. $7 \times 1 + 6 \times 1 =$
4. $11 \times 1 + 5 \times 1 =$
5. $12 \times 1 + 3 \times 1 =$
6. $8 \times 1 + 4 \times 1 =$
7. $9 \times 1 + 7 \times 1 =$
8. $8 \times 1 + 3 \times 1 =$
9. $10 \times 1 + 6 \times 1 =$
10. $4 \times 1 + 7 \times 1 =$
11. $8 \times 1 + 7 \times 1 =$
12. $12 \times 1 + 4 \times 1 =$
13. $10 \times 1 + 3 \times 1 =$
14. $8 \times 1 + 6 \times 1 =$
15. $8 \times 1 + 8 \times 1 =$
16. $13 \times 1 + 3 \times 1 =$

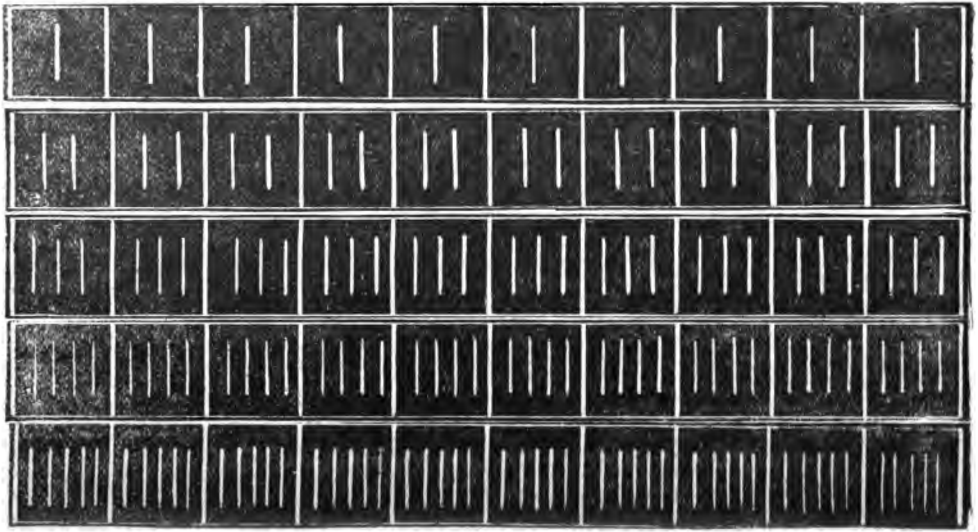
LESSON LI.

Oral:—

1. $4 \times 1 + 5 \times 1 + 6 \times 1 =$
2. $5 \times 1 + 3 \times 1 + 5 \times 1 =$
3. $3 \times 1 + 4 \times 1 + 6 \times 1 =$
4. $6 \times 1 + 5 \times 1 + 5 \times 1 =$
5. $7 \times 1 + 5 \times 1 + 3 \times 1 =$
6. $5 \times 1 + 3 \times 1 + 4 \times 1 =$
7. $4 \times 1 + 5 \times 1 + 7 \times 1 =$
8. $4 \times 1 + 4 \times 1 + 3 \times 1 =$
9. $7 \times 1 + 3 \times 1 + 6 \times 1 =$
10. $4 \times 1 + 3 \times 1 + 4 \times 1 =$

ARITHMETICAL CHART.

FIGURE 5. The 1s, 2s, 3s, 4s, and 5s. [See Directions, Fig. 1, page 6.]



11. $6 \times 1 + 2 \times 1 + 7 \times 1 =$
12. $8 \times 1 + 4 \times 1 + 4 \times 1 =$
13. $8 \times 1 + 2 \times 1 + 3 \times 1 =$
14. $5 \times 1 + 3 \times 1 + 6 \times 1 =$
15. $4 \times 1 + 4 \times 1 + 8 \times 1 =$
16. $6 \times 1 + 7 \times 1 + 3 \times 1 =$
17. $3 \times 4 + 4 \times 4 + 3 \times 4 =$
18. $2 \times 4 + 2 \times 4 + 2 \times 4 =$
19. $2 \times 4 + 3 \times 4 + 4 \times 4 =$
20. $3 \times 3 + 5 \times 3 + 1 \times 3 =$
21. $2 \times 3 + 1 \times 3 + 3 \times 3 =$
22. $3 \times 3 + 4 \times 3 + 1 \times 3 =$
23. $3 \times 2 + 5 \times 2 + 2 \times 2 =$
24. $4 \times 2 + 1 \times 2 + 3 \times 2 =$

$1 \times 5 = 5 \times 1$ $2 \times 5 =$ $3 \times 5 =$

L = 50 LI =

LESSON LII.

1. $4 \times 1 + 6 \times 1 =$
2. $7 \times 1 + 5 \times 1 =$
3. $6 \times 1 + 5 \times 1 =$
4. $8 \times 1 + 7 \times 1 =$
5. $6 \times 1 + 6 \times 1 =$
6. $9 \times 1 + 5 \times 1 =$
7. $8 \times 1 + 6 \times 1 =$
8. $10 \times 1 + 5 \times 1 =$
9. $9 \times 1 + 6 \times 1 =$
10. $8 \times 1 + 5 \times 1 =$
11. $7 \times 1 + 4 \times 1 =$
12. $8 \times 1 + 8 \times 1 =$

13. $6\times1+6\times1=$
14. $7\times1+5\times1=$
15. $4\times1+3\times1=$
16. $8\times1+6\times1=$
17. $6\times1+5\times1=$
18. $14\times1+2\times1=$

19. $9\times1+8\times1=$
20. $11\times1+5\times1=$
21. $13\times1+3\times1=$
22. $7\times1+10\times1=$
23. $9\times1+5\times1=$
24. $8\times1+10\times1=$

1. $4\times3+2\times3+3\times3=$
2. $3\times3+1\times3+2\times3=$
3. $3\times3+5\times3+2\times3=$
4. $4\times3+1\times3+2\times3=$
5. $7\times3+1\times3+1\times3=$
6. $3\times4+5\times4+4\times4=$
7. $2\times4+1\times4+3\times4=$
8. $3\times4+2\times4+4\times4=$
9. $2\times4+2\times4+1\times4=$
10. $3\times4+3\times4+3\times4=$
11. $2\times4+2\times4+2\times4=$
12. $2\times2+1\times2+3\times2=$
13. $3\times2+2\times2+2\times2=$
14. $3\times3+3\times3+3\times3=$
15. $2\times3+1\times3+1\times3=$
16. $1\times5+1\times5+1\times5=$

$4\times5=20\times1$ $5\times5=$ $6\times5=$

LII = 52 LIII =

LESSON LIII.

1. $3 \times 1 + 3 \times 1 + 2 \times 1 =$
2. $3 \times 1 + 4 \times 1 + 5 \times 1 =$
3. $3 \times 1 + 3 \times 1 + 5 \times 1 =$
4. $5 \times 1 + 3 \times 1 + 7 \times 1 =$
5. $4 \times 1 + 2 \times 1 + 6 \times 1 =$
6. $4 \times 1 + 5 \times 1 + 7 \times 1 =$
7. $4 \times 1 + 4 \times 1 + 6 \times 1 =$
8. $7 \times 1 + 3 \times 1 + 5 \times 1 =$
9. $6 \times 1 + 3 \times 1 + 6 \times 1 =$
10. $6 \times 1 + 2 \times 1 + 5 \times 1 =$
11. $3 \times 1 + 4 \times 1 + 4 \times 1 =$
12. $3 \times 1 + 5 \times 1 + 8 \times 1 =$
13. $3 \times 1 + 3 \times 1 + 6 \times 1 =$
14. $3 \times 1 + 4 \times 1 + 5 \times 1 =$
15. $5 \times 1 + 2 \times 1 + 6 \times 1 =$
16. $2 \times 1 + 2 \times 1 + 3 \times 1 =$
17. $4 \times 1 + 4 \times 1 + 6 \times 1 =$
18. $4 \times 1 + 2 \times 1 + 5 \times 1 =$
19. $8 \times 1 + 6 \times 1 + 2 \times 1 =$
20. $5 \times 1 + 4 \times 1 + 8 \times 1 =$
21. $6 \times 1 + 5 \times 1 + 5 \times 1 =$
22. $6 \times 1 + 7 \times 1 + 3 \times 1 =$
23. $7 \times 1 + 5 \times 1 + 5 \times 1 =$

24. $5 \times 1 + 4 \times 1 + 5 \times 1 =$
25. $8 \times 1 + 7 \times 1 + 3 \times 1 =$

1. $2 \times 5 + 2 \times 5 + 2 \times 5 =$
2. $3 \times 5 + 1 \times 5 + 2 \times 5 =$
3. $1 \times 5 + 1 \times 5 + 2 \times 5 =$
4. $1 \times 5 + 1 \times 5 + 1 \times 5 =$
5. $3 \times 4 + 2 \times 4 + 1 \times 4 =$
6. $4 \times 4 + 2 \times 4 + 3 \times 4 =$
7. $2 \times 4 + 2 \times 4 + 1 \times 4 =$
8. $5 \times 4 + 3 \times 4 + 1 \times 4 =$
9. $1 \times 4 + 7 \times 4 + 2 \times 4 =$
10. $3 \times 3 + 2 \times 3 + 4 \times 3 =$
11. $2 \times 3 + 2 \times 3 + 2 \times 3 =$
12. $4 \times 3 + 3 \times 3 + 1 \times 3 =$
13. $6 \times 3 + 2 \times 3 + 2 \times 3 =$
14. $2 \times 2 + 3 \times 2 + 2 \times 2 =$
15. $5 \times 2 + 2 \times 2 + 1 \times 2 =$
16. $3 \times 2 + 4 \times 2 + 2 \times 2 =$

$7 \times 5 = 35 \times 1$ $\qquad$ $8 \times 5 =$

LIV = 54 $\qquad$ LV =

LESSON LIV.

1. If there are 4 pencils in 1 box, how many pencils are there in 9 boxes?

2. If 8 boys spend 1 cent a day, how many cents will they spend in 3 days?

3. If one box cost 5 cents, how many cents will 7 boxes cost?

4. If one orange cost 3 cents, how many cents will 7 oranges cost?

5. John spends 5 cents in 1 day, how many cents will he spend in 8 days?

1. $6\times1+7\times1=$
2. $8\times1+6\times1=$
3. $9\times1+6\times1=$
4. $8\times1+7\times1=$
5. $6\times1+11\times1=$
6. $9\times1+5\times1=$
7. $11\times1+4\times1=$
8. $7\times1+5\times1=$
9. $5\times1+12\times1=$
10 $6\times1+5\times1=$
11. $8\times1+8\times1=$
12 $9\times1+7\times1=$
13. $11\times1+5\times1=$
14. $4\times1+12\times1=$
15. $8\times1+5\times1=$
16. $4\times1+7\times1=$

$9\times5=$ $10\times5=$ LVI= LVII=

9=IX 17= 14= 13=

25= 29= 37= 40=

LESSON LV.

Oral:—

1. $3\times1+4\times1+6\times1=$

2. $5 \times 1 + 3 \times 1 + 6 \times 1 =$
3. $4 \times 1 + 5 \times 1 + 6 \times 1 =$
4. $5 \times 1 + 3 \times 1 + 7 \times 1 =$
5. $6 \times 1 + 5 \times 1 + 6 \times 1 =$
6. $6 \times 1 + 3 \times 1 + 5 \times 1 =$
7. $4 \times 1 + 7 \times 1 + 4 \times 1 =$
8. $5 \times 1 + 4 \times 1 + 3 \times 1 =$
9. $4 \times 1 + 2 \times 1 + 5 \times 1 =$
10. $5 \times 1 + 3 \times 1 + 8 \times 1 =$
11. $7 \times 1 + 2 \times 1 + 7 \times 1 =$
12. $6 \times 1 + 5 \times 1 + 5 \times 1 =$
13. $4 \times 1 + 7 \times 1 + 5 \times 1 =$
14. $5 \times 1 + 3 \times 1 + 5 \times 1 =$
15. $4 \times 1 + 3 \times 1 + 7 \times 1 =$

16. $4 \times 5 + 5 \times 5 =$
17. $7 \times 5 + 1 \times 5 =$
18. $4 \times 5 + 3 \times 5 =$
19. $3 \times 5 + 3 \times 5 =$
20. $4 \times 4 + 3 \times 4 =$
21. $6 \times 4 + 3 \times 4 =$
22. $3 \times 4 + 5 \times 4 =$
23. $2 \times 3 + 7 \times 3 =$
24. $4 \times 3 + 5 \times 3 =$
25. $6 \times 2 + 3 \times 2 =$

$6 \times 3 =$
$4 \times 2 =$
$3 \times 4 =$
$7 \times 3 =$

$4 \times 4 =$
$2 \times 5 =$
$9 \times 3 =$
$5 \times 4 +$

$7 \times 4 =$
$8 \times 5 =$
$7 \times 1 =$
$8 \times 1 =$

$8\times4=$
$7\times2=$
$9\times5=$
$3\times5=$
$6\times3=$
$9\times4=$
$8\times3=$
$10\times5=$
$10\times3=$
$6\times2=$
$2\times4=$
$5\times4=$

$27=$XXVII
$48=$
$19=$
$50=$
$33=$
$14=$
$40=$
$16=$

LESSON LVI.

1. $2\times4+3\times4+4\times4=9\times4=36\times1$ (or "36")
2. $3\times4+2\times4+2\times4=7\times4=28\times1$
3. $2\times4+2\times4+2\times4=6\times4=24\times1$
4. $3\times4+1\times4+2\times4=$
5. $4\times4+3\times4+3\times4=$
6. $7\times4+1\times4+1\times4=$
7. $3\times5+2\times5+5\times5=$
8. $2\times5+2\times5+5\times5=$
9. $3\times5+1\times5+4\times5=$
10. $2\times5+3\times5+2\times5=$
11. $2\times5+1\times5+3\times5=$
12. $2\times5+1\times5+2\times5=$
13. $3\times3+4\times3+3\times3=$
14. $2\times3+1\times3+6\times3=$
15. $3\times3+3\times3+2\times3=$
16. $4\times3+1\times3+2\times3=$

17. $3 \times 3 + 1 \times 3 + 2 \times 3 =$

18. $2 \times 3 + 2 \times 3 + 2 \times 3 =$

19. $1 \times 3 + 1 \times 3 + 1 \times 3 =$

20. $3 \times 2 + 3 \times 2 + 3 \times 2 =$

21. $7 \times 2 + 1 \times 2 + 2 \times 2 =$

22. $3 \times 2 + 3 \times 2 + 2 \times 2 =$

23. $5 \times 2 + 1 \times 2 + 1 \times 2 =$

24. $1 \times 2 + 2 \times 2 + 2 \times 2 =$

$9 \times 2 =$
$6 \times 5 =$
$6 \times 3 =$
$7 \times 1 =$
$3 \times 3 =$
$8 \times 4 =$
$2 \times 2 =$
$7 \times 4 =$
$4 \times 2 =$
$3 \times 4 =$
$8 \times 2 =$
$9 \times 5 =$
$10 \times 3 =$
$10 \times 5 =$

LESSON LVII.

1. If 9 boys have 4 cents each, how many cents have they?

2. If there are 5 cents in one box, how many cents are there in 7 boxes?

3. If 1 girl has 4 cents, how many cents will 6 girls have?

4. If 1 box cost 2 cents, how many cents will 7 boxes cost?

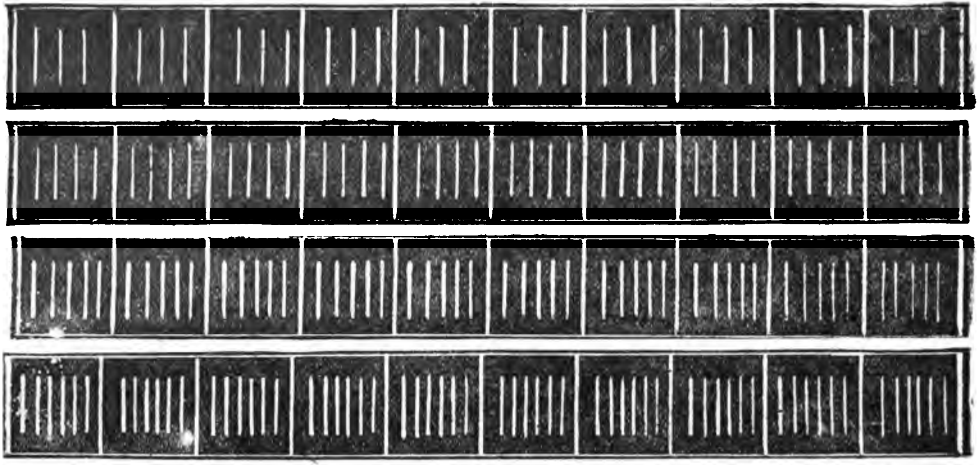
5. If 7 boys have 2 eyes each, how many eyes have they?

1. $8\times1+6\times1=$
2. $7\times1+5\times1=$
3. $4\times1+6\times1=$
4. $7\times1+6\times1=$
5. $9\times1+5\times1=$
6. $8\times1+8\times1=$
7. $11\times1+6\times1=$
8. $8\times1+7\times1=$
9. $9\times1+5\times1=$
10. $12\times1+5\times1=$
11. $11\times1+6\times1=$
12. $7\times1+5\times1=$
13. $4\times1+13\times1=$
14. $9\times1+7\times1=$
15. $14\times1+3\times1=$
16. $8\times1+6\times1=$

1. $5\times3+2\times3+2\times3=$
2. $3\times3+4\times3+1\times3=$
3. $2\times3+2\times3+1\times3=$
4. $5\times5+4\times5+1\times5=$
5. $3\times5+3\times5+3\times5=$
6. $2\times5+2\times5+3\times5=$
7. $3\times4+3\times4+2\times4=$
8. $3\times4+2\times4+1\times4=$
9. $1\times4+3\times4+5\times4=$
10. $2\times2+1\times2+3\times2=$
11. $1\times2+4\times2+4\times2=$
12. $3\times2+5\times2+2\times2=$
13. $1\times2+1\times2+1\times2=$

ARITHMETICAL CHART.

Figure 6. The 3s, 4s, 5s, and 6s. [See Directions, Fig. 1, page 6.]



LESSON LVIII.

1. $5 \times 1 + 3 \times 1 + 6 \times 1 =$
2. $3 \times 1 + 4 \times 1 + 5 \times 1 =$
3. $4 \times 1 + 3 \times 1 + 3 \times 1 =$
4. $3 \times 1 + 4 \times 1 + 6 \times 1 =$
5. $5 \times 1 + 4 \times 1 + 5 \times 1 =$
6. $5 \times 1 + 8 \times 1 + 3 \times 1 =$
7. $6 \times 1 + 5 \times 1 + 6 \times 1 =$
8. $4 \times 1 + 7 \times 1 + 4 \times 1 =$
9. $6 \times 1 + 5 \times 1 + 3 \times 1 =$
10. $7 \times 1 + 5 \times 1 + 5 \times 1 =$
11. $6 \times 1 + 4 \times I + 6 \times 1 =$
12. $3 \times 1 + 4 \times 1 + 2 \times 1 =$
13. $4 \times 1 + 7 \times 1 + 6 \times 1 =$
14. $4 \times 1 + 5 \times 1 + 7 \times 1 =$
15. $7 \times 1 + 3 \times 1 + 7 \times 1 =$
16. $5 \times 1 + 6 \times 1 + 3 \times 1 =$
17. $4 \times 5 + 3 \times 5 + 3 \times 5 =$
18. $2 \times 5 + 6 \times 5 + 1 \times 5 =$
19. $3 \times 4 + 1 \times 4 + 5 \times 4 =$
20. $2 \times 4 + 3 \times 4 + 2 \times 4 =$
21. $3 \times 3 + 2 \times 3 + 4 \times 3 =$
22. $2 \times 3 + 1 \times 3 + 3 \times 3 =$
23. $2 \times 2 + 3 \times 2 + 2 \times 2 =$

$1\times6=6\times1$

$2\times6=$

$3\times6=$

LVIII=

LIX=

46=XLVI

55=

37=

17=

55=

29=

$9\times5=$

$6\times5=$

$8\times5=$

$5\times5=$

$2\times2=$

$3\times3=$

$8\times3=$

$8\times3=$

$7\times3=$

$7\times3=$

$2\times4=$

$4\times7=$

$6\times5=$

$7\times5=$

$7\times2=$

$4\times5=$

$4\times4=$

$3\times3=$

$5\times2=$

$10\times4=$

$8\times1=$

LESSON LIX.

1. If 1 boy has 5 cents, how many cents will 7 boys have?

2. If there are 3 apples in one box, how many apples are there in 9 boxes?

3. If 1 book cost 2 cents, how many cents will 8 books cost?

4. If 1 girl has 6 cents, how many cents will 3 girls have?

5. If 1 box cost 3 cents, how many cents will 7 boxes cost?

1. $9\times1+6\times1=$

2. $7\times1+6\times1=$

3. $5\times1+7\times1=$
4. $8\times1+4\times1=$
5. $6\times1+8\times1=$
6. $5\times1+10\times1=$
7. $8\times1+7\times1=$
8. $9\times1+5\times1=$
9. $12\times1+5\times1=$
10. $11\times1+4\times1=$
11. $9\times1+7\times1=$
12. $6\times1+11\times1=$
13. $4\times1+3\times1=$
14. $8\times1+9\times1=$
15. $7\times1+9\times1=$
16. $5\times1+12\times1=$
17. $2\times1+15\times1=$
18. $3\times1+13\times1=$
19. $8\times1+4\times1=$
20. $11\times1+3\times1=$
21. $8\times1+8\times1=$
22. $4\times1+5\times1=$
23. $6\times1+5\times1=$
24. $4\times1+7\times1=$

$4\times6=24\times1$ $5\times6=$

LX=60 13=XIII 19=
26= 35= 39=
45= 56= 19=

LESSON LXX.

1. If 1 boy has 3 cents, how many cents will 6 boys have?

2. If there are 6 oranges in one box, how many oranges are there in 4 boxes?

3. If 1 book cost 4 cents, how much will 4 books cost?

4. Mary has 3 cents, and Nellie has 4 times as many cents; how many cents has Nellie?

5. If 1 pencil cost 3 cents, how many cents will 7 pencils cost?

1. $3 \times 1 + 6 \times 1 + 3 \times 1 =$
2. $7 \times 1 + 2 \times 1 + 3 \times 1 =$
3. $7 \times 1 + 3 \times 1 + 3 \times 1 =$
4. $2 \times 1 + 6 \times 1 + 3 \times 1 =$
5. $6 \times 1 + 7 \times 1 + 4 \times 1 =$
6. $8 \times 1 + 6 \times 1 + 3 \times 1 =$
7. $2 \times 1 + 9 \times 1 + 4 \times 1 =$
8. $4 \times 1 + 3 \times 1 + 6 \times 1 =$
9. $3 \times 1 + 6 \times 1 + 6 \times 1 =$

14=XIV
26=
13=
32=
45=
56=
17=
9=
19=

LESSON LXXI.

1. $5 \times 1 + 4 \times 1 + 6 \times 1 =$
2. $3 \times 1 + 4 \times 1 + 6 \times 1 =$
3. $5 \times 1 + 3 \times 1 + 4 \times 1 =$
4. $2 \times 1 + 6 \times 1 + 4 \times 1 =$
5. $6 \times 1 + 3 \times 1 + 5 \times 1 =$
6. $5 \times 1 + 3 \times 1 + 7 \times 1 =$

7. $8 \times 1 + 3 \times 1 + 4 \times 1 =$
8. $5 \times 1 + 4 \times 1 + 5 \times 1 =$
9. $8 \times 1 + 4 \times 1 + 5 \times 1 =$
10. $6 \times 1 + 5 \times 1 + 4 \times 1 =$
11. $2 \times 1 + 2 \times 1 + 3 \times 1 =$
12. $8 \times 1 + 6 \times 1 + 3 \times 1 =$
13. $7 \times 1 + 5 \times 1 + 4 \times 1 =$
14. $5 \times 1 + 7 \times 1 + 5 \times 1 =$
15. $2 \times 1 + 8 \times 1 + 7 \times 1 =$
16. $3 \times 1 + 7 \times 1 + 6 \times 1 =$
17. $5 \times 1 + 3 \times 1 + 4 \times 1 =$
18. $6 \times 1 + 5 \times 1 + 3 \times 1 =$
19. $8 \times 1 + 2 \times 1 + 6 \times 1 =$
20. $4 \times 1 + 3 \times 1 + 2 \times 1 =$
21. $4 \times 1 + 2 \times 1 + 5 \times 1 =$
22. $4 \times 1 + 6 \times 1 + 7 \times 1 =$
23. $8 \times 1 + 4 \times 1 + 4 \times 1 =$
24. $7 \times 1 + 6 \times 1 + 4 \times 1 =$
25. $7 \times 1 + 7 \times 1 + 3 \times 1 =$

1. $4\times5+5\times5=9\times5=45\times1$
2. $3\times5+4\times5=$
3. $6\times5+4\times5=$
4. $3\times5+3\times5=$
5. $5\times5+3\times5=$
6. $2\times6+3\times6=$
7. $4\times6+1\times6=$
8. $3\times6+2\times6=$
9. $4\times4+3\times4=$

10. $5\times4+4\times4=$
11. $6\times4+4\times4=$
12. $3\times3+4\times3=$
13. $7\times3+2\times3=$
14. $8\times3+2\times3=$

LESSON LXXII.

1. If 5 boys have 6 cents each, how many cents will they all have?

2. If one book cost 6 cents, how many cents will 4 books cost?

3. If a boy spends 4 cents in one day, how many cents will he spend in 9 days?

4. If there are 6 pounds in 1 box, how many pounds are there in 5 boxes?

5. John spends 6 cents in one day, how many cents will he spend in 4 days?

1. $14\times1+3\times1=$
2. $8\times1+7\times1=$
3. $6\times1+4\times1=$
4. $9\times1+7\times1=$
5. $11\times1+6\times1=$
6. $12\times1+5\times1=$
7. $8\times1+5\times1=$
8. $15\times1+2\times1=$
9. $12\times1+5\times1=$
10. $9\times1+6\times1=$
11. $7\times1+7\times1=$
12. $8\times1+8\times1=$
13. $4\times3+1\times3=$
14. $11\times1+5\times1=$
15. $4\times1+12\times1=$
16. $13\times1+4\times1=$

1. $3 \times 6 + 1 \times 6 + 2 \times 6 = 6 \times 6 = 36 \times 1$
2. $4 \times 6 + 2 \times 6 + 1 \times 6 =$
3. $3 \times 6 + 1 \times 6 + 1 \times 6 =$
4. $1 \times 6 + 1 \times 6 + 1 \times 6 =$
5. $3 \times 5 + 3 \times 5 + 4 \times 5 =$
6. $2 \times 5 + 4 \times 5 + 3 \times 5 =$
7. $3 \times 5 + 1 \times 5 + 2 \times 5 =$
8. $2 \times 4 + 2 \times 4 + 2 \times 4 =$
9. $3 \times 4 + 3 \times 4 + 2 \times 4 =$
10. $2 \times 4 + 3 \times 4 + 2 \times 4 =$
11. $1 \times 4 + 2 \times 4 + 3 \times 4 =$
12. $3 \times 3 + 1 \times 3 + 2 \times 3 =$
13. $4 \times 3 + 1 \times 3 + 4 \times 3 =$
14. $2 \times 3 + 3 \times 3 + 3 \times 3 =$
15. $4 \times 2 + 4 \times 2 + 1 \times 2 =$
16. $3 \times 2 + 2 \times 2 + 3 \times 2 =$

LESSON LXXIII.

Oral Work :—

1. $8 \times 1 + 6 \times 1 + 3 \times 1 =$
2. $8 \times 1 + 3 \times 1 + 4 \times 1 =$
3. $4 \times 1 + 3 \times 1 + 6 \times 1 =$
4. $5 \times 1 + 4 \times 1 + 7 \times 1 =$

5. $5 \times 1 + 7 \times 1 + 5 \times 1 =$
6. $4 \times 1 + 4 \times 1 + 5 \times 1 =$
7. $8 \times 1 + 7 \times 1 + 2 \times 1 =$
8. $9 \times 1 + 4 \times 1 + 4 \times 1 =$
9. $7 \times 1 + 4 \times 1 + 5 \times 1 =$
10. $9 \times 1 + 5 \times 1 + 3 \times 1 =$
11. $8 \times 1 + 7 \times 1 + 1 \times 1 =$
12. $6 \times 1 + 7 \times 1 + 3 \times 1 =$
13. $7 \times 1 + 8 \times 1 + 2 \times 1 =$
14. $3 \times 1 + 6 \times 1 + 5 \times 1 =$
15. $5 \times 1 + 6 \times 1 + 4 \times 1 =$
16. $8 \times 1 + 7 \times 1 + 3 \times 1 =$

17. $3 \times 6 + 3 \times 6 = 6 \times 6 = 36 \times 1$
18. $5 \times 6 + 2 \times 6 =$
19. $3 \times 6 + 2 \times 6 =$
20. $4 \times 5 + 5 \times 5 =$
21. $3 \times 5 + 7 \times 5 =$
22. $4 \times 4 + 6 \times 4 =$
23. $3 \times 4 + 6 \times 4 =$
24. $5 \times 3 + 2 \times 3 =$
25. $2 \times 3 + 3 \times 3 =$

$8 \times 6 =$ $9 \times 6 =$ $10 \times 6 =$

13=XIII
27=
14=
6=
16=
30=
50=
29=
9=
19=
15=
45=
30=
52=

LESSON LXXIV.

1. $3 \times 6 + 3 \times 6 + 4 \times 6 = 10 \times 6 = 60 \times 1$
2. $4 \times 6 + 2 \times 6 + 1 \times 6 =$
3. $3 \times 6 + 3 \times 6 + 3 \times 6 =$
4. $4 \times 6 + 1 \times 6 + 2 \times 6 =$
5. $3 \times 6 + 1 \times 6 + 2 \times 6 =$
6. $4 \times 6 + 1 \times 6 + 1 \times 6 =$
7. $3 \times 6 + 1 \times 6 + 1 \times 6 =$
8. $3 \times 5 + 1 \times 5 + 5 \times 5 =$
9. $3 \times 5 + 2 \times 5 + 2 \times 5 =$
10. $1 \times 5 + 2 \times 5 + 3 \times 5 =$
11. $4 \times 5 + 1 \times 5 + 1 \times 5 =$
12. $6 \times 5 + 1 \times 5 + 1 \times 5 =$
13. $3 \times 4 + 3 \times 4 + 1 \times 4 =$
14. $1 \times 4 + 4 \times 4 + 2 \times 4 =$
15. $1 \times 4 + 2 \times 4 + 3 \times 4 =$
16. $2 \times 4 + 2 \times 4 + 2 \times 4 =$
17. $3 \times 4 + 1 \times 4 + 1 \times 4 =$
18. $3 \times 3 + 3 \times 3 + 3 \times 3 =$
19. $2 \times 3 + 1 \times 3 + 2 \times 3 =$
20. $4 \times 3 + 3 \times 3 + 3 \times 3 =$
21. $2 \times 3 + 2 \times 3 + 1 \times 3 =$
22. $2 \times 2 + 2 \times 2 + 1 \times 2 =$

XIV=14 X= XXII= XXXIX=

III= XXXIV= XLII= XLVI=
XLVII= LIV= LVII= LX=

LESSON LXXV.

$7\times6=$
$8\times5=$
$9\times3=$
$9\times6=$
$5\times4=$
$10\times6=$
$7\times4=$

$8\times2=$
$4\times4=$
$8\times3=$
$7\times5=$
$5\times6=$
$7\times4=$
$8\times2=$

$9\times2=$
$10\times3=$
$5\times5=$
$4\times6=$
$7\times2=$
$5\times4=$
$6\times7=$

$8\times4=$
$3\times3=$

$10\times2=$
$7\times5=$

1. $10\times1+8\times1=18\times1$
2. $9\times1+9\times1=18\times1$
3. $7\times1+11\times1=$
4. $8\times1+7\times1=$
5. $6\times1+7\times1=$
6. $9\times1+8\times1=$
7. $12\times1+5\times1=$
8. $14\times1+3\times1=$
9. $13\times1+4\times1=$
10. $9\times1+3\times1=$
11. $7\times1+5\times1=$
12. $6\times1+4\times1=$
13. $8\times1+5\times1=$
14. $7\times1+7\times1=$
15. $8\times1+8\times1=$
16. $11\times1+6\times1=$
17. $12\times1+4\times1=$
18. $7\times1+7\times1=$
19. $13\times1+2\times1=$
20. $8\times1+6\times1=$
21. $9\times1+4\times1=$
22. $5\times1+7\times1=$

23. $8\times1+4\times1=$ 24. $7\times1+2\times1=$

XIX= XXV= X= XXXIV=

XLII= XLVIII= LV=

13=XIII 17= 26= 35=

42= 49= 56=

LESSON LXXVI.

1. $5\times1+5\times1+8\times1=$
2. $6\times1+9\times1+3\times1=$
3. $7\times1+6\times1+5\times1=$
4. $5\times1+3\times1+7\times1=$
5. $6\times1+3\times1+4\times1=$
6. $5\times1+4\times1+6\times1=$
7. $6\times1+4\times1+8\times1=$
8. $7\times1+4\times1+5\times1=$
9. $8\times1+5\times1+3\times1=$
10. $3\times1+6\times1+5\times1=$
11. $4\times1+5\times1+9\times1=$
12. $7\times1+6\times1+5\times1=$
13. $8\times1+6\times1+4\times1=$
14. $7\times1+7\times1+3\times1=$
15. $3\times1+9\times1+5\times1=$
16. $8\times1+7\times1+3\times1=$
17. $4\times1+12\times1+4\times1=$

18. $3 \times 1 + 8 \times 1 + 6 \times 1 =$
19. $4 \times 1 + 4 \times 1 + 4 \times 1 =$
20. $3 \times 1 + 3 \times 1 + 3 \times 1 =$
21. $7 \times 1 + 4 \times 1 + 5 \times 1 =$
22. $5 \times 1 + 6 \times 1 + 4 \times 1 =$
23. $5 \times 1 + 5 \times 1 + 5 \times 1 =$
23. $3 \times 1 + 8 \times 1 + 4 \times 1 =$

1. If 10 boys have 6 cents each, how many cents have they?

2. If 7 boxes have 4 sides each, how many sides have they?

3. If 1 pencil cost 5 cents, how many cents will 8 pencils cost?

4. If John spends 6 cents in 1 day, how many cents will he spend in 7 days?

5. If 9 girls have 2 eyes each, how many eyes have they?

1. $3 \times 6 + 4 \times 6 + 2 \times 6 = 9 \times 6 = 54 \times 1$
2. $4 \times 6 + 2 \times 6 + 1 \times 6 =$
3. $3 \times 6 + 1 \times 6 + 2 \times 6 =$
4. $3 \times 6 + 2 \times 6 + 2 \times 6 =$
5. $4 \times 5 + 2 \times 5 + 1 \times 5 =$
6. $2 \times 5 + 2 \times 5 + 2 \times 5 =$
7. $3 \times 4 + 3 \times 4 + 3 \times 4 =$

8. $3 \times 4 + 3 \times 4 + 2 \times 4 =$
9. $3 \times 3 + 1 \times 3 + 3 \times 3 =$
10. $2 \times 3 + 2 \times 3 + 2 \times 3 =$

LESSON LXXVII.

1. $6 \times 1 + 12 \times 1 = 18 \times 1$
2. $5 \times 1 + 13 \times 1 =$
3. $4 \times 1 + 14 \times 1 =$
4. $10 \times 1 + 7 \times 1 =$
5. $8 \times 1 + 7 \times 1 =$
6. $6 \times 1 + 8 \times 1 =$
7. $9 \times 1 + 9 \times 1 =$
8. $7 \times 1 + 11 \times 1 =$
9. $10 \times 1 + 8 \times 1 =$
10. $8 \times 1 + 5 \times 1 =$
11. $7 \times 1 + 11 \times 1 =$
12. $7 \times 1 + 5 \times 1 =$
13. $9 \times 1 + 6 \times 1 =$
14. $10 \times 1 + 5 \times 1 =$
15. $9 \times 1 + 4 \times 1 =$
16. $5 \times 1 + 7 \times 1 =$

XIX=19 XXVI= XXIX= XXXII=
XLIV= XLVIII= LV=

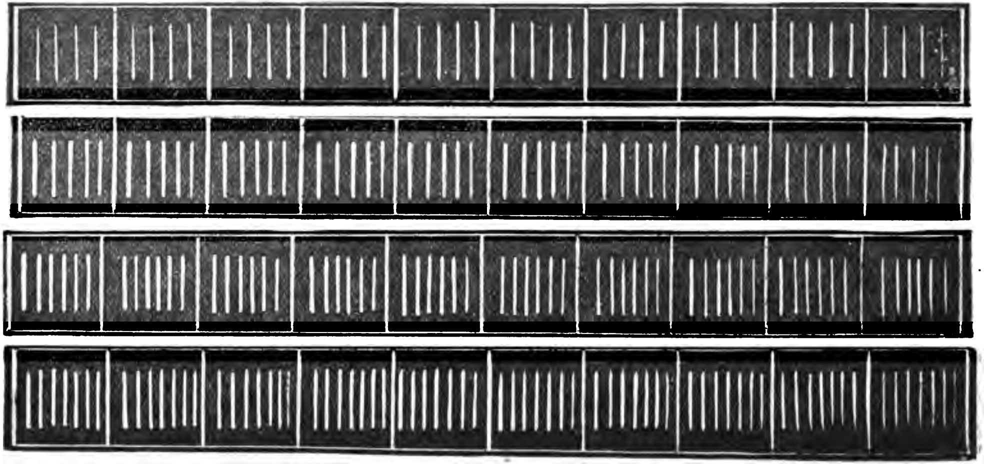
14=XIV 9= 17= 26=
37= 45= 52= 54=

$1 \times 7 = 7 \times 1$ $2 \times 7 =$ $3 \times 7 =$

1. $3 \times 6 + 4 \times 6 + 3 \times 6 = 10 \times 6 = 60 \times 1$
2. $2 \times 6 + 3 \times 6 + 4 \times 6 =$
3. $2 \times 6 + 2 \times 6 + 2 \times 6 =$
4. $3 \times 5 + 1 \times 5 + 4 \times 5 =$
5. $3 \times 5 + 3 \times 5 + 3 \times 5 =$

ARITHMETICAL CHART.

Figure 7. The 4s, 5s, 6s, and 7s. [See Directions, Fig. 1, page 6.]



6. $4 \times 4 + 2 \times 4 + 3 \times 4 =$
7. $2 \times 4 + 3 \times 4 + 2 \times 4 =$
8. $1 \times 4 + 2 \times 4 + 2 \times 4 =$
9. $3 \times 3 + 1 \times 3 + 3 \times 3 =$
10. $4 \times 3 + 1 \times 3 + 2 + 3 =$
11. $3 \times 3 + 1 \times 3 + 1 \times 3 =$
12. $3 \times 2 + 2 \times 2 + 1 \times 2 =$
13. $2 \times 2 + 1 \times 2 + 2 \times 2 =$

LESSON LXXVIII.

ORAL :—

1. $3 \times 1 + 6 \times 1 + 6 \times 1 = 15 \times 1$
2. $4 \times 1 + 7 \times 1 + 6 \times 1 =$
3. $6 \times 1 + 7 \times 1 + 4 \times 1 =$
4. $8 \times 1 + 6 \times 1 + 3 \times 1 =$
5. $3 \times 1 + 7 \times 1 + 7 \times 1 =$
6. $2 \times 1 + 3 \times 1 + 2 \times 1 =$
7. $3 \times 1 + 4 \times 1 + 1 \times 1 =$
8. $6 \times 1 + 3 \times 1 + 5 \times 1 =$
9. $4 \times 1 + 4 \times 1 + 4 \times 1 =$
10. $7 \times 1 + 2 \times 1 + 4 \times 1 =$
11. $7 \times 1 + 7 \times 1 + 3 \times 1 =$
12. $6 \times 1 + 8 \times 1 + 2 \times 1 =$
13. $3 \times 4 + 4 \times 4 = 7 \times 4 = 28 \times 1$

14. $4\times4+5\times4=$

15. $6\times4+3\times4=$

16. $7\times4+2\times4=$

17. $8\times4+2\times4=$

18. $7\times5+3\times5=$

19. $6\times5+1\times5=$

20. $4\times6+5\times6=$

21. $5\times6+3\times6=$

22. $7\times6+1\times6=$

23. $1\times7+2\times7=$

24. $3\times3+7\times3=$

XX=20 XV= XXVII=

XXXIV= X= V=

XL= XLVIII= LX=

LESSON LXXIX.

BLACKBOARD WORK:—

1. $6\times1+5\times1+7\times1=$
2. $5\times1+6\times1+7\times1=$
3. $4\times1+7\times1+7\times1=$
4. $7\times1+3\times1+7\times1=$
5. $5\times1+3\times1+7\times1=$
6. $6\times1+6\times1+6\times1=$
7. $9\times1+5\times1+4\times1=$
8. $7\times1+6\times1+5\times1=$
9. $3\times1+6\times1+6\times1=$
10. $8\times1+7\times1+3\times1=$
11. $3\times1+3\times1+10\times1=$

12. $6 \times 1 + 7 \times 1 + 4 \times 1 =$
13. $8 \times 1 + 6 \times 1 + 3 \times 1 =$
14. $3 \times 1 + 9 \times 1 + 4 \times 1 =$
15. $6 \times 1 + 5 \times 1 + 4 \times 1 =$
16. $3 \times 1 + 8 \times \mathrm{I} + 6 \times 1 =$
17. $4 \times 1 + 6 \times 1 + 7 \times 1 =$
18. $7 \times 1 + 7 \times 1 + 4 \times 1 =$
19. $8 \times 1 + 6 \times 1 + 3 \times 1 =$
20. $9 \times 1 + 4 \times 1 + 4 \times 1 =$
21. $8 \times 1 + 3 \times 1 + 6 \times 1 =$
22. $9 \times 1 + 1 \times 1 + 6 \times 1 =$
23. $10 \times 1 + 6 \times 1 + 1 \times 1 =$

$4 \times 7 =$ $5 \times 7 =$

1. $4 \times 6 + 6 \times 6 = 10 \times 6 = 60 \times 1$
2. $5 \times 6 + 3 \times 6 =$
3. $3 \times 5 + 4 \times 5 =$
4. $2 \times 5 + 5 \times 5 =$
5. $3 \times 4 + 4 \times 4 =$
6. $5 \times 4 + 2 \times 4 =$
7. $6 \times 3 + 3 \times 3 =$
8. $3 \times 3 + 3 \times 3 =$
9. $9 \times 2 + 1 \times 2 =$
10. $4 \times 2 + 4 \times 2 =$

XXXVI=36 XIX= XXVII=
XLV= XLVIII=

LESSON LXXX.

1. If there are 6 marbles in 1 box, how many

marbles are there in 6 boxes? *Ans.* The 6 boxes have 6×6 marbles, which are 36 marbles

2. If I spend 6 cents in 1 day, how many cents will I spend in 9 days?

3. If 8 books cost 4 cents each, how many cents will the books cost?

4. If 1 chair cost 6 cents, how many cents will 7 chairs cost?

5. If 9 girls have 4 oranges each, how many oranges have they?

1. $3\times1+15\times1=$
2. $2\times1+16\times1=$
3. $1\times1+17\times1=$
4. $8\times1-7\times1=$
5. $10\times1+8\times1=$
6. $9\times1+5\times1=$
7. $9\times1+9\times1=$
8. $11\times1+7\times1=$
9. $8\times1+6\times1=$
10. $7\times1+3\times1=$
11. $8\times1+4\times1=$
12. $6\times1+12\times1=$
13. $11\times1+6\times1=$
14. $13\times1+3\times1=$
15. $9\times1+5\times1=$
16. $4\times1+14\times1=$
17. $10\times1+7\times1=$

$8\times6=$ $9\times5=$ $7\times4\times$ $3\times3=$ $5\times5=$

$4\times6=$ $7\times3=$ $10\times5=$ $4\times7=$ $6\times6=$

$5\times4=$ $6\times2=$ $9\times2=$ $10\times6=$

XII=12 XVII= XXII= XXXII=

XLVI= XLIX= LIII= IX=

LESSON LXXXI.

1. $3 \times 1 + 8 \times 1 + 7 \times 1 =$
2. $2 \times 1 + 9 \times 1 + 7 \times 1 =$
3. $3 \times 1 + 9 \times 1 + 6 \times 1 =$
4. $3 \times 1 + 6 \times 1 + 5 \times 1 =$
5. $6 \times 1 + 7 \times 1 + 6 \times 1 =$
6. $4 \times 1 + 3 \times 1 + 8 \times 1 =$
7. $5 \times 1 + 5 \times 1 + 5 \times 1 =$
8. $7 \times 1 + 5 \times 1 + 4 \times 1 =$
9. $6 \times 1 + 8 \times 1 + 4 \times 1 =$
10. $3 \times 1 + 9 \times 1 + 4 \times 1 =$
11. $7 \times 1 + 8 \times 1 + 4 \times 1 =$
12. $5 \times 1 + 7 \times 1 + 3 \times 1 =$
13. $7 \times 1 + 8 \times 1 + 3 \times 1 =$
14. $2 \times 1 + 7 \times 1 + 5 \times 1 =$
15. $7 \times 1 + 3 \times 1 + 3 \times 1 =$
16. $3 \times 1 + 3 \times 1 + 2 \times 1 =$
17. $5 \times 1 + 6 \times 1 + 6 \times 1 =$
18. $3 \times 1 + 8 \times 1 + 5 \times 1 =$
19. $4 \times 1 + 7 \times 1 + 3 \times 1 =$
20. $10 \times 1 + 4 \times 1 + 3 \times 1 =$
21. $7 \times 1 + 6 \times 1 + 4 \times 1 =$
22. $3 \times 1 + 9 \times 1 + 4 \times 1 =$
23. $5 \times 1 + 7 \times 1 + 5 \times 1 =$

$6\times7=$ $7\times7=$

1. $3\times7+2\times7+2\times7=7\times7=49\times1$
2. $2\times7+2\times7+2\times7=$
3. $3\times6+2\times6+2\times6=$
4. $4\times6+1\times6+1\times6=$
5. $4\times5+2\times5+3\times5=$
6. $2\times5+3\times5+2\times5=$
7. $3\times4+3\times4+3\times4=$
8. $2\times4+3\times4+5\times4=$
9. $3\times3+2\times3+4\times3=$
10. $2\times3+5\times3+1\times3=$
11. $4\times2+1\times2+5\times2=$
12. $3\times2+3\times2+3\times2=$

LESSON LXXXII.

1. If 1 boy have 7 cents, how many cents will 6 boys have? *Ans.* 6 boys will have 6×7 cents, which are 42 cents.

2. If 1 book cost 5 cents, how much will 5 books cost?

3. If 1 girl have 6 boxes, how many boxes will 4 girls have?

4. John has 6 cents, and Mary has three times as many; how many cents has Mary?

5. If 1 boy have 3 books, how many books will 7 boys have?

1. $6 \times 1 + 3 \times 1 + 4 \times 1 =$
2. $4 \times 1 + 6 \times 1 + 7 \times 1 =$
3. $8 \times 1 + 4 \times 1 + 3 \times 1 =$
4. $3 \times 1 + 7 \times 1 + 6 \times 1 =$
5. $7 \times 1 + 4 \times 1 + 6 \times 1 =$
6. $3 \times 1 + 6 \times 1 + 3 \times 1 =$
7. $4 \times 1 + 3 \times 1 + 4 \times 1 =$
8. $5 \times 1 + 7 \times 1 + 3 \times 1 =$
9. $3 \times 1 + 4 \times 1 + 7 \times 1 =$
10. $8 \times 1 + 4 \times 1 + 3 \times 1 =$
11. $7 \times 1 + 6 \times 1 + 2 \times 1 =$

$3 \times 3 =$
$9 \times 4 =$
$10 \times 4 =$
$8 \times 4 =$
$7 \times 3 =$
$4 \times 4 =$
$10 \times 5 =$
$6 \times 7 =$
$10 \times 3 =$
$9 \times 4 =$
$7 \times 3 =$
$2 \times 2 =$

LESSON LXXXIII.

1. $10 \times 1 + 9 \times 1 = 19 \times 1$
2. $11 \times 1 + 8 \times 1 =$
3. $12 \times 1 + 6 \times 1 =$
4. $13 \times 1 + 4 \times 1 =$

5. $14\times1+4\times1=$

6. $8\times1+7\times1=$

7. $6\times1+7\times1=$

8. $5\times1+6\times1=$

9. $6\times1+8\times1=$

10. $11\times1+5\times1=$

11. $12\times1+4\times1=$

12. $8\times1+3\times1=$

13. $7\times1+5\times1=$

14. $7\times1+6\times1=$

15. $3\times3+4\times3+3\times3=10\times3=30\times1$

16. $3\times3+2\times3+4\times3=$

17. $2\times4+5\times4+2\times4=$

18. $5\times4+2\times4+1\times4=$

19. $6\times5+1\times5+1\times5=$

20. $3\times5+2\times5+2\times5=$

21. $4\times6+1\times6+2\times6=$

22. $3\times6+1\times6+1\times6=$

23. $3\times7+2\times7+2\times7=$

24. $2\times7+2\times7+2\times7=$

$9\times6=$

$7\times3=$

$10\times4=$

$10\times4=$

$10\times5=$

$8\times5=$

$2\times2=$

$5\times5=$

$3\times7=$

$7\times5=$

$4\times4=$

$7\times5=$

$8\times2=$

$8\times4=$

$7\times7=$

16=XVI　19=　25=　9=

32=　47=　50=

XXII=22　XI=　XXXIV=

XXXIV= XLVIII= XLIII=

XIII=

LESSON LXXXIV.

1. If 1 boy have 3 books, how many books will 6 boys have? *Ans.* 6 boys will have 6 times 3 books, which are 18 books.

2. If there are 7 pencils in 1 box, how many pencils are there in 6 boxes?

3. If 1 book cost 5 cents, how many cents will 8 books cost?

4. Jennie has 4 cents, and Mary has 8 times as many cents; how many cents has Mary?

5. If 8 boys have 3 apples each, how many apples have they?

1. $7\times1+3\times1+9\times1=19\times1$
2. $6\times1+5\times1+8\times1=$
3. $8\times1+4\times1+7\times1=$
4. $6\times1+7\times1+4\times1=$
5. $7\times1+7\times1+4\times1=$
6. $8\times1+6\times1+5\times1=$
7. $3\times1+8\times1+6\times1=$
8. $7\times1+2\times1+3\times1=$
9. $8\times1+5\times1+6\times1=$

10. $6 \times 1 + 7 \times 1 + 5 \times 1 =$
11. $8 \times 1 + 7 \times 1 + 4 \times 1 =$
12. $4 \times 1 + 6 \times 1 + 8 \times 1 =$

$8 \times 7 =$ $9 \times 7 =$ $10 \times 7 =$

1. $4 \times 7 + 3 \times 7 + 3 \times 7 =$
2. $3 \times 7 + 3 \times 7 + 3 \times 7 =$
3. $4 \times 7 + 1 \times 7 + 2 \times 7 =$
4. $2 \times 7 + 1 \times 7 + 2 \times 7 =$
5. $3 \times 7 + 1 \times 7 + 2 \times 7 =$
6. $3 \times 7 + 2 \times 7 + 2 \times 7 =$
7. $2 \times 7 + 2 \times 7 + 2 \times 7 =$
8. $3 \times 7 + 2 \times 7 + 1 \times 7 =$
9. $1 \times 7 + 1 \times 7 + 1 \times 7 =$

LESSON LXXXV.

1. $17 \times 1 + 2 \times 1 = 19 \times 1$
2. $15 \times 1 + 4 \times 1 =$
3. $13 \times 1 + 4 \times 1 =$
4. $14 \times 1 + 4 \times 1 =$
5. $13 \times 1 + 3 \times 1 =$
6. $4 \times 1 + 9 \times 1 =$
7. $3 \times 1 + 15 \times 1 =$
8. $2 \times 1 + 16 \times 1 =$
9. $5 \times 1 + 13 \times 1 =$
10. $8 \times 1 + 7 \times 1 =$
11. $9 \times 1 + 8 \times 1 =$
12. $7 \times 1 + 5 \times 1 =$
13. $9 \times 1 + 4 \times 1 =$
14. $16 \times 1 + 2 \times 1 =$
15. $3 \times 3 + 3 \times 3 + 3 \times 3 = 9 \times 3 = 27 \times 1$

16. $2 \times 3 + 3 \times 3 + 2 \times 3 =$
17. $3 \times 4 + 3 \times 4 + 3 \times 4 =$
18. $2 \times 4 + 1 \times 4 + 3 \times 4 =$
19. $3 \times 5 + 2 \times 5 + 4 \times 5 =$
20. $2 \times 5 + 1 \times 5 + 4 \times 5 =$
21. $3 \times 6 + 1 \times 6 + 2 \times 6 =$
22 $1 \times 6 + 2 \times 6 + 5 \times 6 =$
23. $3 \times 7 + 1 \times 7 + 3 \times 7 =$
24. $4 \times 7 + 2 \times 7 + 3 \times 7 =$
25 $3 \times 3 + 3 \times 3 + 3 \times 3 =$

$8 \times 7 =$
$3 \times 7 =$
$10 \times 7 =$
$4 \times 7 =$
$3 \times 6 =$
$4 \times 5 =$

$6 \times 6 =$
$5 \times 5 =$
$5 \times 6 =$
$4 \times 4 =$
$3 \times 3 =$
$2 \times 7 =$

$8 \times 3 =$
$10 \times 2 =$
$7 \times 4 =$
$8 \times 5 =$
$10 \times 5 =$
$7 \times 5 =$

$4 \times 3 =$
$2 \times 2 =$

16=XVI
29=

19=
37=

25=
31=

14=
44=

XXIV=24
XLII=

XVI=
XLVII=

XXXVII=
LII=

LESSON LXXXVI.

1. $3 \times 7 + 4 \times 7 = 7 \times 7 = 49 \times 1$

2. $4\times7+5\times7=$
3. $6\times7+4\times7=$
4. $3\times7+3\times7=$
5. $4\times7+4\times7=$
6. $5\times7+1\times7=$
7. $3\times7+2\times7=$
8. $3\times6+4\times6=$
9. $5\times6+1\times6=$
10. $6\times6+4\times6=$
11. $3\times6+2\times6=$

12 $5\times6+3\times6=$
13. $2\times6+2\times6=$
14. $3\times5+6\times5=$
15. $4\times5+4\times5=$
16. $3\times5+7\times5=$
17. $2\times5+3\times5=$
18. $2\times5+2\times5=$
19. $4\times5+2\times5=$
20. $3\times5+3\times5=$
21. $6\times4+3\times4=$
22. $3\times4+4\times4=$

1. $6\times1+7\times1+6\times1=$
2. $8\times1+4\times1+3\times1=$
3. $7\times1+6\times1+3\times1=$
4. $5\times1+6\times1+7\times1=$
5. $3\times1+5\times1+5\times1=$
6. $6\times1+5\times1+5\times1=$
7. $9\times1+9\times1+2\times1=$

16=XVI **17=** **19=** **26=**

19= **46=** **54=** **39=**

XXXIV=34 **XLIX=** **LX=**

LVIII= **LXII=** **IX=**

XVI=

LESSON LXXXVII.

1. If 9 boys have 7 cents each, how many cents have they? *Ans.* They have 9×7 cents, which are 63 cents.

2. If 1 book cost 6 cents, how many cents will 8 books cost?

3. Jane has 6 cents, and Mary has 5 times as many cents; how many cents has Mary?

4. John has 6 boxes, and James has 6 times as many boxes; how many boxes has James?

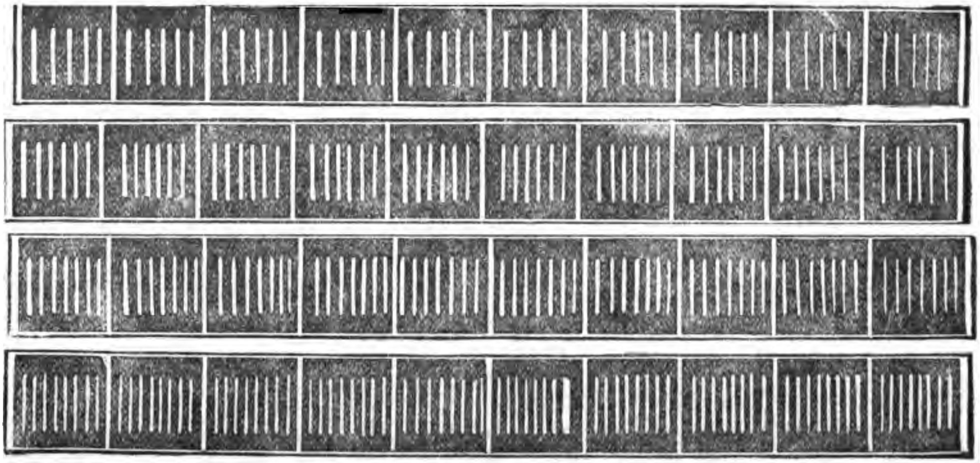
5. If there are 9 marbles in each of 5 boxes, how many marbles in all?

1. $13\times1+6\times1=19\times1$
2. $16\times1+3\times1=$
3. $14\times1+5\times1=$
4. $16\times1+2\times1=$
5. $8\times1+7\times1=$
6. $6\times1+7\times1=$
7. $8\times1+9\times1=$
8. $11\times1+6\times1=$
9 $12\times1+5\times1=$
10. $8\times1+8\times1=$
11. $9\times1+6\times1=$
12. $10\times1+9\times1=$
13 $8\times1+4\times1=$
14. $7\times1+7\times1=$
15. $10\times1+6\times1=$
16. $13\times1+4\times1=$
17. $11\times1+7\times1=$
18. $9\times1+3\times1=$
19. $4\times1+5\times1=$
20. $8\times1+3\times1=$

16=XVI 13= 9= 23= 29= 37=
42= 49= 7= 15= 50=

ARITHMETICAL CHART.

Figure 7. The 5s, 6s, 7s, and 8s. [See Directions, Fig. 1, page 6.]



LESSON LXXXVIII.

1. $6 \times 1 + 7 \times 1 + 6 \times 1 = 19 \times 1$ (or 19)
2. $9 \times 1 + 7 \times 1 + 3 \times 1 =$
3. $6 \times 1 + 8 \times 1 + 5 \times 1 =$
4. $8 \times 1 + 8 \times 1 + 2 \times 1 =$
5. $7 \times 1 + 6 \times 1 + 6 \times 1 =$
6. $8 \times 1 + 5 \times 1 + 4 \times 1 =$
7. $4 \times 1 + 7 \times 1 + 6 \times 1 =$
8. $6 \times 1 + 5 \times 1 + 6 \times 1 =$
9. $5 \times 1 + 7 \times 1 + 4 \times 1 =$
10. $8 \times 1 + 4 \times 1 + 3 \times 1 =$
11. $7 \times 1 + 6 \times 1 + 4 \times 1 =$
12. $7 \times 1 + 7 \times 1 + 5 \times 1 =$
13. $4 \times 1 + 6 \times 1 + 9 \times 1 =$
14. $8 \times 1 + 7 \times 1 + 3 \times 1 =$
15. $13 \times 1 + 4 \times 1 + 1 \times 1 =$
16. $8 \times 1 + 7 \times 1 + 3 \times 1 =$
17. $3 \times 7 + 4 \times 7 + 2 \times 7 =$
18. $4 \times 7 + 2 \times 7 + 2 \times 7 =$
19. $3 \times 6 + 2 \times 6 + 4 \times 6 =$
20. $4 \times 6 + 1 \times 6 + 3 \times 6 =$
21. $3 \times 5 + 3 \times 5 + 2 \times 5 =$
22. $2 \times 5 + 4 \times 5 + 1 \times 5 =$
23. $4 \times 4 + 1 \times 4 + 4 \times 4 =$

24. $3 \times 4 + 2 \times 4 + 2 \times 4 =$

25. $3 \times 3 + 4 \times 3 + 1 \times 3 =$

$1 \times 8 = 8 \times 1$ $7 \times 3 =$ $7 \times 4 =$

$2 \times 8 =$ $6 \times 3 =$ $4 \times 4 =$

$3 \times 8 =$ $4 \times 5 =$ $10 \times 3 =$

$6 \times 7 =$ $9 \times 5 =$

XX=20 XI= XXIII= XXXVI=

XL= XLIV= LV=

17=XVII 22= 29=

35= 42= 51=

$8 \times 4 = 32 \times 1$ $8 \times 6 =$ $6 \times 6 =$

$5 \times 5 =$ $10 \times 7 =$ $6 \times 3 =$

$8 \times 2 =$ $9 \times 4 =$

LESSON LXXXIX.

1. $8 \times 1 + 7 \times 1 = 12 \times 1$
2. $9 \times 1 + 5 \times 1 =$
3. $8 \times 1 + 4 \times 1 =$
4. $6 \times 1 + 7 \times 1 =$
5. $5 \times 1 + 4 \times 1 =$
6. $11 \times 1 + 6 \times 1 =$
7. $12 \times 1 + 5 \times 1 =$
8. $8 \times 1 + 8 \times 1 =$
9. $9 \times 1 + 8 \times 1 =$
10. $8 \times 1 + 12 \times 1 =$
11. $10 \times 1 + 10 \times 1 =$
12. $18 \times 1 + 2 \times 1 =$
13. $15 \times 1 + 5 \times 1 =$
14. $9 \times 1 + 6 \times 1 =$
15. $9 \times 1 + 9 \times 1 =$
16. $6 \times 1 + 6 \times 1 =$

17. $8\times1+8\times1=$
18. $7\times1+4\times1=$
19. $6\times1+8\times1=$
20. $13\times1+4\times1=$
21. $8\times1+3\times1=$
22. $14\times1+5\times1=$
23. $16\times1+3\times1=$
24. $7\times1+5\times1=$

$9\times6=$
$8\times4=$
$7\times5=$
$3\times3=$
$10\times7=$
$6\times6=$
$8\times7=$
$6\times2=$
$10\times3=$
$9\times4=$
$7\times6=$
$8\times4=$
$5\times5=$
$6\times5=$
$9\times5=$

14=XIV
60=
27=
42=
19=
35=
55=
47=

LESSON XC.

General Note: VI. The pupils read the sign, "—," either "less" or "minus"; but not "less" at one time, and "minus" at another. (See Note I, lesson XX, of the Manual.)

1. $5\times1+3\times1+7\times1=15\times1$
2. $6\times1+3\times1+5\times1=$
3. $5\times1+3\times1+4\times1=$
4. $6\times1+3\times1+4\times1=$
5. $5\times1+7\times1+4\times1=$
6. $6\times1+5\times1+8\times1=$
7. $5\times1+4\times1+7\times1=$

8. $8 \times 1 + 6 \times 1 + 6 \times 1 =$
9. $6 \times 1 + 7 \times 1 + 6 \times 1 =$
10. $8 \times 1 + 9 \times 1 + 5 \times 1 =$
11. $9 \times 1 + 7 \times 1 + 3 \times 1 =$
12. $8 \times 1 + 7 \times 1 + 5 \times 1 =$
13. $9 \times 1 + 6 \times 1 + 4 \times 1 =$
14. $11 \times 1 + 6 \times 1 + 5 \times 1 =$
15. $13 \times 1 + 4 \times 1 + 4 \times 1 =$
16. $8 \times 1 + 6 \times 1 + 4 \times 1 =$
17. $5 \times 1 + 5 \times 1 + 8 \times 1 =$
18. $9 \times 1 + 7 \times 1 + 4 \times 1 =$
19. $6 \times 1 + 7 \times 1 + 5 \times 1 =$
20. $8 \times 1 + 5 \times 1 + 6 \times 1 =$
21. $7 \times 1 + 7 \times 1 + 5 \times 1 =$
22. $8 \times 1 + 4 \times 1 + 4 \times 1 =$

$4 \times 8 = 32 \times 1$

$5 \times 8 =$

1. $5 \times 1 - 3 \times 1 = 2 \times 1$
2. $4 \times 1 - 1 \times 1 =$
3. $5 \times 1 - 2 \times 1 =$
4. $6 \times 1 - 2 \times 1 =$
5. $8 \times 1 - 1 \times 1 =$
6. $7 \times 1 - 5 \times 1 =$
7. $8 \times 1 - 3 \times 1 =$
8. $3 \times 1 - 2 \times 1 =$
9. $5 \times 1 - 4 \times 1 =$
10. $8 \times 1 - 4 \times 1 =$

1. $8 \times 1 + 7 \times 1 = 15 \times 1$
2. $6 \times 1 + 7 \times 1 =$
3. $8 \times 1 + 6 \times 1 =$
4. $9 \times 1 + 7 \times 1 =$

5. $6\times1+9\times1=$
6. $11\times1+6\times1=$
7. $12\times1+7\times1=$
8. $9\times1+5\times1=$
9. $13\times1+6\times1=$
10. $7\times1+5\times1=$

LESSON XCI.

1. If 1 hat cost 7 cents, how many cents will 9 hats cost? *Ans.* 9 hats will cost 9×7 cents, which are 63 cents.

2. If there are 8 pencils in 1 box, how many pencils are there in 5 boxes?

3. John has 7 apples, and his brother has 6 times as many; how many apples has his brother?

4. If 1 pencil cost 5 cents, how many cents will 6 pencils cost?

5. John has 7 books, and Jennie has 10 times as many books; how many books has Jennie?

1. $11\times1+9\times1=$
2. $16\times1+4\times1=$
3. $13\times1+6\times1=$
4. $15\times1+3\times1=$
5. $8\times1+7\times1=$
6. $6\times1+7\times1=$
7. $8\times1+9\times1=$
8. $11\times1+6\times1=$
9. $12\times1+7\times1=$
10. $9\times1+8\times1=$

$$6\times8=48\times1$$

1. $7\times1-2\times1=$
2. $6\times1-4\times1=$
3. $5\times1-2\times1=$
4. $4\times1-2\times1=$
5. $6\times1-3\times1=$
6. $7\times1-4\times1=$
7. $5\times1-1\times1=$
8. $7\times1-1\times1=$
9. $6\times1-2\times1=$
10. $7\times1-5\times1=$

L=50 LX= LXIV=
LXX= XIX= XXVIII=
XLIV= XXXI= LVI=

LESSON XCII.

1 $5\times1+6\times1+9\times1=$
2. $9\times1+7\times1+4\times1=$
3. $6\times1+7\times1+6\times1=$
4. $8\times1+6\times1+4\times1=$
5 $7\times1+6\times1+5\times1=$
6. $9\times1+4\times1+5\times1=$
7. $6\times1+8\times1+5\times1=$
8. $5\times1+5\times1+8\times1=$
9. $6\times1+7\times1+6\times1=$
10. $8\times1+5\times1+6\times1=$
11. $3\times1+7\times1+10\times1=$
12. $6\times1+6\times1+8\times1=$
13. $8\times1+5\times1+4\times1=$
14 $9\times1+5\times1+4\times1=$

15. $11 \times 1 + 6 \times 1 + 3 \times 1 =$
16. $8 \times 1 + 7 \times 1 + 5 \times 1 =$
17. $6 \times 1 + 7 \times 1 + 3 \times 1 =$
18. $3 \times 1 + 4 \times 1 + 7 \times 1 =$
19. $4 \times 1 + 8 \times 1 + 3 \times 1 =$
20. $9 \times 1 + 7 \times 1 + 4 \times 1 =$
21. $8 \times 1 + 6 \times 1 + 3 \times 1 =$
22. $4 \times 1 + 5 \times 1 + 9 \times 1 =$
23. $7 \times 1 + 5 \times 1 + 6 \times 1 =$

1. $8 \times 1 - 5 \times 1 = 3 \times 1$ (or 3)
2. $7 \times 1 - 3 \times 1 =$
3. $3 \times 1 - 2 \times 1 =$
4. $8 \times 1 - 3 \times 1 =$
5. $7 \times 1 - 1 \times 1 =$
6. $4 \times 1 - 2 \times 1 =$
7. $3 \times 1 - 1 \times 1 =$
8. $5 \times 1 - 3 \times 1 =$
9. $9 \times 1 - 2 \times 1 =$
10. $8 \times 1 - 4 \times 1 =$
11. $7 \times 1 - 3 \times 1 =$
12. $9 \times 1 - 5 \times 1 =$

$8 \times 5 =$ $7 \times 6 =$ $9 \times 4 =$
$7 \times 5 =$ $8 \times 7 =$ $10 \times 3 =$
$4 \times 4 =$ $3 \times 3 =$ $5 \times 6 =$
$9 \times 7 =$ $8 \times 4 =$

LESSON XCIII.

1. $12 \times 1 + 8 \times 1 =$
2. $17 \times 1 + 3 \times 1 =$

3. $14\times1+3\times1=$
4. $8\times1+7\times1=$
5. $6\times1+7\times1=$
6. $8\times1+6\times1=$
7. $9\times1+7\times1=$
8. $11\times1+7\times1=$
9. $9\times1+5\times1=$
10. $10\times1+10\times1=$
11. $8\times1+5\times1=$
12. $8\times1+6\times1=$
13. $3\times7+2\times7+5\times7=$
14. $4\times7+3\times7+2\times7=$
15. $3\times7+2\times7+3\times7=$
16. $4\times6+3\times6+3\times6=$
17. $2\times6+1\times6+3\times6=$
18. $4\times6+2\times6+1\times6=$
19. $3\times5+4\times5+1\times5=$
20. $3\times5+2\times5+1\times5=$
21. $4\times4+2\times4+2\times4=$
22. $4\times4+2\times4+1\times4=$

1. $10\times1-5\times1=5\times1$
2. $6\times1-4\times1=$
3. $7\times1-3\times1=$
4. $8\times1-4\times1=$
5. $3\times1-1\times1=$
6. $4\times1-3\times1=$
7. $7\times1-4\times1=$
8. $8\times1-4\times1=$
9. $9\times1-3\times1=$
10. $7\times1-6\times1=$

13=XIII 17= 65= 43=
47= 57= 64= 29=
32= 9= 3= 5=

LESSON XCIV.

1. $7 \times 1 + 5 \times 1 + 8 \times 1 =$
2. $9 \times 1 + 8 \times 1 + 3 \times 1 =$
3. $8 \times 1 + 5 \times 1 + 6 \times 1 =$
4. $7 \times 1 + 6 \times 1 + 5 \times 1 =$
5. $9 \times 1 + 4 \times 1 + 7 \times 1 =$
6. $11 \times 1 + 4 \times 1 + 5 \times 1 =$
7. $14 \times 1 + 3 \times 1 + 4 \times 1 =$
8. $8 \times 1 + 8 \times 1 + 4 \times 1 =$
9. $5 \times 1 + 5 \times 1 + 5 \times 1 =$
10. $3 \times 1 + 8 \times 1 + 9 \times 1 =$
11. $6 \times 1 + 6 \times 1 + 7 \times 1 =$
12. $8 \times 1 + 4 \times 1 + 8 \times 1 =$
13. $9 \times 1 + 9 \times 1 + 2 \times 1 =$
14. $4 \times 1 + 4 \times 1 + 4 \times 1 =$
15. $8 \times 1 + 7 \times 1 + 3 \times 1 =$
16. $6 \times 1 + 7 \times 1 + 6 \times 1 =$
17. $8 \times 1 + 6 \times 1 + 5 \times 1 =$
18. $3 \times 1 + 6 \times 1 + 9 \times 1 =$
19. $8 \times 1 + 5 \times 1 + 3 \times 1 =$
20. $7 \times 1 + 7 \times 1 + 4 \times 1 =$
21. $9 \times 1 + 6 \times 1 + 3 \times 1 =$

$7 \times 8 = 56 \times 1$ $\qquad$ $8 \times 8 =$

1. $9\times1-3\times1=6\times1$
2. $8\times1-5\times1=$
3. $3\times1-2\times1=$
4. $7\times1-4\times1=$
5. $9\times1-5\times1=$
6. $10\times1-7\times1=$
7. $8\times1-3\times1=$
8. $6\times1-4\times1=$
9. $11\times1-5\times1=$
10. $10\times1-6\times1=$

XXXIX=
LX=
LI=
XXXIV=
XLVIII=
LIII=
LIV=
XXXI=
IV=

LESSON XCV.

1. If 10 boys have 7 cents each, how many cents will they have? *Ans.* They will have 10×7 cents, which are 70 cents.

2. If 1 book cost 8 cents, how many cents will 5 books cost?

3. There are 8 pencils in 1 box; how many pencils are there in 7 boxes?

4. John has 8 cents, and James has 7 times as many cents; how many cents has James?

5. Mary has 6 oranges and Emma has 9 times as many oranges; how many oranges has Emma?

1. $13\times1+7\times1=$
2. $9\times1+8\times1=$
3. $6\times1+7\times1=$
4. $14\times1+6\times1=$

5. $9\times1+9\times1=$
6. $9\times1+7\times1=$
7. $8\times1+7\times1=$
8. $11\times1+7\times1=$
9. $8\times1+6\times1=$
10. $9\times1+6\times1=$

1. $7\times8+1\times8=8\times8=64\times1$
2. $4\times8+3\times8=$
3. $3\times8+4\times8=$
4. $4\times7+3\times7=$
5. $5\times7+3\times7=$
6. $4\times7+4\times7=$
7. $3\times6+4\times6=$
8. $5\times6+2\times6=$
9. $3\times5+4\times5=$
10. $4\times5+5\times5=$

$8\times8=$
$7\times6=$
$9\times5=$
$8\times4=$
$7\times3=$
$6\times5=$
$9\times7=$
$9\times5=$
$8\times4=$

LESSON XCVI.

Oral Work:—

1. $8\times1+6\times1+6\times1=$
2. $7\times1+11\times1+2\times1=$
3. $3\times1+4\times1+7\times1=$
4. $8\times1+4\times1+5\times1=$
5. $6\times1+7\times1+6\times1=$
6. $8\times1+5\times1+7\times1=$
7. $9\times1+5\times1+4\times1=$
8. $8\times1+6\times1+5\times1=$

9. $7 \times 1 + 4 \times 1 + 4 \times 1 =$
10. $3 \times 1 + 9 \times 1 + 7 \times 1 =$
11. $8 \times 1 + 8 \times 1 + 3 \times 1 =$
12. $3 \times 1 + 7 \times 1 + 10 \times 1 =$
13. $10 \times 1 + 6 \times 1 + 4 \times 1 =$
14. $9 \times 1 + 5 \times 1 + 4 \times 1 =$
15. $8 \times 1 + 7 \times 1 + 3 \times 1 =$
16. $4 \times 1 + 7 \times 1 + 3 \times 1 =$
17. $4 \times 1 + 4 \times 1 + 5 \times 1 =$
18. $3 \times 1 + 6 \times 1 + 7 \times 1 =$
19. $4 \times 1 + 7 \times 1 + 3 \times 1 =$
20. $8 \times 1 + 5 \times 1 + 2 \times 1 =$
21. $9 \times 1 + 3 \times 1 + 3 \times 1 =$
22. $10 \times 1 + 3 \times 1 + 2 \times 1 =$
23. $7 \times 1 + 6 \times 1 + 5 \times 1 =$
24. $3 \times 1 + 8 \times 1 + 6 \times 1 =$

$9 \times 8 = 72 \times 1$ $10 \times 8 =$

1. $3 \times 8 + 4 \times 8 + 2 \times 8 =$
2. $4 \times 8 + 1 \times 8 + 4 \times 8 =$
3. $3 \times 8 + 3 \times 8 + 3 \times 8 =$
4. $3 \times 8 + 1 \times 8 + 2 \times 8 =$
5. $4 \times 7 + 2 \times 7 + 3 \times 7 =$
6. $4 \times 7 + 3 \times 7 + 3 \times 7 =$
7. $5 \times 7 + 3 \times 7 + 5 \times 7 =$

8. $2 \times 7 + 2 \times 7 + 2 \times 7 =$
9. $1 \times 7 + 3 \times 7 + 2 \times 7 =$
10. $3 \times 6 + 3 \times 6 + 3 \times 6 =$
11. $2 \times 6 + 1 \times 6 + 3 \times 6 =$
12. $3 \times 6 + 2 \times 6 + 3 \times 6 =$
13. $4 \times 6 + 4 \times 6 + 2 \times 6 =$
14. $4 \times 5 + 2 \times 5 + 3 \times 5 =$
15. $3 \times 5 + 2 \times 5 + 3 \times 5 =$
16. $1 \times 5 + 2 \times 5 + 3 \times 5 =$
17. $2 \times 5 + 2 \times 5 + 2 \times 5 =$
18. $4 \times 4 + 3 \times 4 + 2 \times 4 =$
19. $2 \times 4 + 3 \times 4 + 1 \times 4 =$

LESSON XCVII.

1. $8 \times 1 + 7 \times 1 =$
2. $9 \times 1 + 6 \times 1 =$
3. $6 \times 1 + 7 \times 1 =$
4. $8 \times 1 + 5 \times 1 =$
5. $11 \times 1 + 7 \times 1 =$
6. $13 \times 1 + 6 \times 1 =$
7. $9 \times 1 + 8 \times 1 =$
8. $11 \times 1 + 8 \times 1 =$
9. $12 \times 1 + 6 \times 1 =$
10. $9 \times 1 + 5 \times 1 =$
11. $9 \times 1 + 4 \times 1 =$
12. $12 \times 1 + 6 \times 1 =$
13. $13 \times 1 + 5 \times 1 =$
14. $9 \times 1 + 3 \times 1 =$
15. $9 \times 1 + 9 \times 1 =$
16. $7 \times 1 + 5 \times 1 =$
17. $8 \times 1 + 4 \times 1 =$
18. $9 \times 1 + 4 \times 1 =$

$10\times8=$

$9\times7=$

$8\times8=$

$7\times8=$

$6\times8=$

$5\times8=$

$4\times8=$

$3\times8=$

$2\times8=$

$10\times7=$

$9\times7=$

$8\times7=$

$7\times7=$

$6\times7=$

$5\times7=$

$4\times7=$

$3\times7=$

$2\times7=$

1. $9\times1-5\times1=$
2. $8\times1-3\times1=$
3. $10\times1-5\times1=$
4. $6\times1-3\times1=$
5. $5\times1-2\times1=$
6. $4\times1-2\times1=$
7. $11\times1-4\times1=$
8. $11\times1-6\times1=$
9. $7\times1-4\times1=$
10. $5\times1-3\times1=$

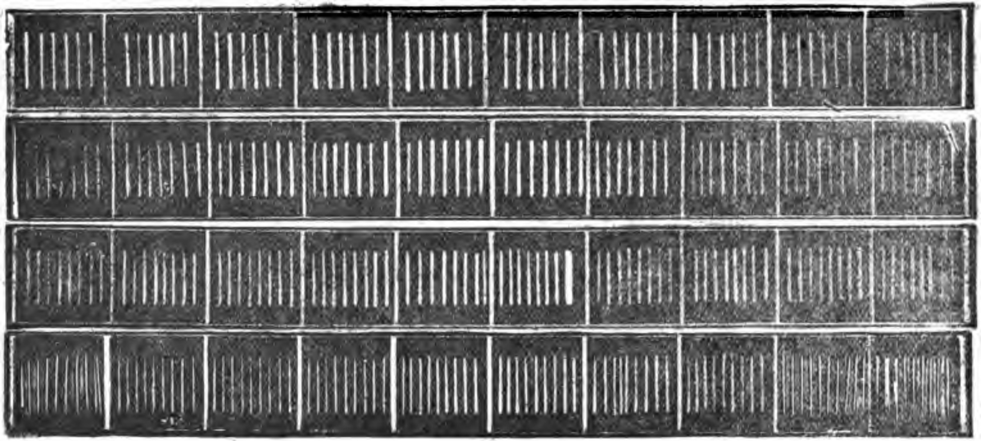
$12\times1-6\times1=$

LESSON XCVIII.

1. $3\times1+6\times1+4\times1+6\times1=$
2. $7\times1+4\times1+3\times1+5\times1=$
3. $6\times1+4\times1+5\times1+4\times1=$
4. $7\times1+6\times1+4\times1+2\times1=$
5. $3\times1+8\times1+6\times1+3\times1=$
6. $7\times1+4\times1+5\times1+4\times1=$
7. $8\times1+3\times1+4\times1+4\times1=$
8. $3\times1+9\times1+6\times1+3\times1=$
9. $7\times1+7\times1+3\times1+3\times1=$
10. $6\times1+6\times1+4\times1+3\times1=$

ARITHMETICAL CHART,

Figure 7. The 6s, 7s, 8s, and 9s. [See Directions, Fig. 1, page 6.]



11. $3 \times 1 + 9 \times 1 + 2 \times 1 + 4 \times 1 =$
12. $7 \times 1 + 6 \times 1 + 4 \times 1 + 3 \times 1 =$
13. $3 \times 8 + 4 \times 8 + 3 \times 8 =$
14. $4 \times 8 + 1 \times 8 + 2 \times 8 =$
15. $3 \times 7 + 2 \times 7 + 4 \times 7 =$
16. $2 \times 7 + 1 \times 7 + 4 \times 7 =$
17. $3 \times 6 + 2 \times 6 + 3 \times 6 =$
18. $2 \times 6 + 1 \times 6 + 2 \times 6 =$
19. $1 \times 5 + 4 \times 5 + 2 \times 5 =$
20. $3 \times 4 + 2 \times 4 + 1 \times 4 =$

$8 \times 7 =$
$9 \times 4 =$
$7 \times 5 =$
$6 \times 6 =$
$7 \times 4 =$
$8 \times 3 =$
$4 \times 2 =$
$7 \times 2 =$
$7 \times 6 =$
$10 \times 7 =$
$8 \times 7 =$
$9 \times 5 =$

LX=60
LXIX=
LXX=
LXXII=
LXXVI=

$1 \times 9 = 9 \times 1$
$2 \times 9 =$
$3 \times 9 =$

LESSON XCIX.

Give fifteen examples in concrete numbers.

1. $8 \times 1 + 6 \times 1 =$
2. $7 \times 1 + 7 \times 1 =$
3. $9 \times 1 + 5 \times 1 =$
4. $8 \times 1 + 7 \times 1 =$
5. $6 \times 1 + 7 \times 1 =$
6. $9 \times 1 + 9 \times 1 =$

7. $11\times1+6\times1=$
8. $8\times1+6\times1=$
9. $9\times1+9\times1=$
10. $12\times1+5\times1=$
11. $7\times1+3\times1=$

12. $3\times8+2\times8+4\times8=$
13. $3\times8+1\times8+4\times8=$
14. $2\times7+6\times7+2\times7=$
15. $3\times7+4\times7+1\times7=$
16. $2\times6+3\times6+3\times6=$
17. $4\times6+1\times6+1\times6=$
18. $4\times5+1\times5+2\times5=$
19. $3\times4+2\times4+3\times4=$
20. $2\times4+1\times4+3\times4=$

1 $13\times1-6\times1=$
2. $14\times1-8\times1=$
3. $14\times1-7\times1=$
4. $11\times1-6\times1=$
5. $10\times1-7\times1=$
6. $9\times1-4\times1=$
7. $8\times1-5\times1=$
8. $7\times1-3\times1=$
9. $13\times1-9\times1=$
10. $14\times1-5\times1=$

$4\times9=36\times1$ $5\times9=$

LESSON C.

1. $2\times2+3\times3=13\times1$
2. $2\times3+2\times2=10\times1$
3. $4\times2+3\times3=17\times1$

4. $3 \times 5 + 2 \times 2 = 19 \times 1$
5. $2 \times 5 + 3 \times 2 = 16 \times 1$
6. $2 \times 6 + 2 \times 2 = 16 \times 1$
7. $3 \times 3 + 2 \times 1 = 11 \times 1$
8. $2 \times 7 + 2 \times 2 = 18 \times 1$
9. $2 \times 8 + 2 \times 2 = 20 \times 1$
10. $8 \times 1 + 7 \times 1 + 4 \times 1 =$
11. $6 \times 1 + 7 \times 1 + 4 \times 1 =$
12. $8 \times 1 + 6 \times 1 + 5 \times 1 =$
13. $7 \times 1 + 7 \times 1 + 7 \times 1 =$
14. $8 \times 1 + 8 \times 1 + 3 \times 1 =$
15. $2 \times 1 + 9 \times 1 + 4 \times 1 =$
16. $6 \times 1 + 6 \times 1 + 6 \times 1 =$
17. $7 \times 1 + 4 \times 1 + 9 \times 1 =$
18. $7 \times 1 + 5 \times 1 + 7 \times 1 =$
19. $9 \times 1 + 5 \times 1 + 3 \times 1 =$
20. $4 \times 1 + 9 \times 1 + 5 \times 1 =$

1. $14 \times 1 - 7 \times 1 =$
2. $13 \times 1 - 6 \times 1 =$
3. $14 \times 1 - 9 \times 1 =$
4. $15 \times 1 - 8 \times 1 =$
5. $13 \times 1 - 7 \times 1 =$
6. $15 \times 1 - 5 \times 1 =$
7. $14 \times 1 - 3 \times 1 =$
8. $9 \times 1 - 5 \times 1 =$
9. $8 \times 1 - 5 \times 1 =$
10. $10 \times 1 - 4 \times 1 =$

35=XXXV 39= 76=

$43=$ $55=$ $17=$ $31=$

$9=$ $1=$

LESSON CI.

Give ten examples in concrete numbers.

1. $8 \times 1 + 6 \times 1 + 3 \times 1 + 1 \times 1 =$
2. $6 \times 1 + 7 \times 1 + 4 \times 1 + 3 \times 1 =$
3. $6 \times 1 + 6 \times 1 + 6 \times 1 + 2 \times 1 =$
4. $4 \times 1 + 3 \times 1 + 6 \times 1 + 6 \times 1 =$
5. $3 \times 1 + 8 \times 1 + 5 \times 1 + 3 \times 1 =$
6. $4 \times 1 + 4 \times 1 + 3 \times 1 + 7 \times 1 =$
7. $7 \times 1 + 3 \times 1 + 7 \times 1 + 3 \times 1 =$
8. $6 \times 1 + 5 \times 1 + 3 \times 1 + 3 \times 1 =$
9. $8 \times 1 + 4 \times 1 + 4 \times 1 + 3 \times 1 =$
10. $6 \times 1 + 3 \times 1 + 2 \times 1 + 6 \times 1 =$
11. $5 \times 1 + 7 \times 1 + 3 \times 1 + 3 \times 1 =$
12. $6 \times 1 + 3 \times 1 + 5 \times 1 + 2 \times 1 =$
13. $5 \times 1 + 3 \times 1 + 3 \times 1 + 2 \times 1 =$
14. $7 \times 1 + 2 \times 1 + 4 \times 1 + 3 \times 1 =$
15. $3 \times 1 + 7 \times 1 + 4 \times 1 + 3 \times 1 =$

16. $14 \times 1 + 3 \times 1 =$ 18. $11 \times 1 + 7 \times 1 =$
17. $8 \times 1 + 7 \times 1 =$ 19. $9 \times 1 + 5 \times 1 =$
20. $7 \times 1 + 5 \times 1 =$

$6 \times 9 = 54 \times 1$ $7 \times 9 =$

LESSON CII.

ORAL WORK :—

1. $15\times1-7\times1=$
2. $13\times1-6\times1=$
3. $13\times1-5\times1=$
4. $10\times1-3\times1=$
5. $8\times1-5\times1=$
6. $15\times1-6\times1=$
7. $13\times1-5\times1=$
8. $12\times1-7\times1=$
9. $11\times1-6\times1=$
10. $10\times1-4\times1=$
11. $11\times1-7\times1=$
12. $14\times1-7\times1=$
13. $14\times1-10\times1=$
14. $13\times1-3\times1=$
15. $14\times1-6\times1=$
16. $9\times1-3\times1=$
17. $7\times1-4\times1=$
18. $6\times1-2\times1=$
19. $4\times1-1\times1=$
20. $5\times1-2\times1=$

1. $2\times5+2\times2=$
2. $3\times3+4\times1=$
3. $2\times4+2\times2=$
4. $7\times2+2\times1=$
5. $6\times3+2\times1=$
6. $3\times1+2\times2=$
7. $4\times2+3\times1=$
8. $7\times1+2\times2=$
9. $5\times3+2\times2=$
10. $4\times3+2\times2=$

VIII=8 XXVII= XLIV=
LXII= LXXVII= LXXX=

14=XIV 17= 39= 39= 47=

LESSON CIII.

1. $6\times1+7\times1+4\times1+5\times1=$

2. $7 \times 1 + 4 \times 1 + 3 \times 1 + 8 \times 1 =$
3. $7 \times 1 + 3 \times 1 + 4 \times 1 + 6 \times 1 =$
4. $8 \times 1 + 6 \times 1 + 4 \times 1 + 5 \times 1 =$
5. $7 \times 1 + 6 \times 1 + 3 \times 1 + 5 \times 1 =$
6. $8 \times 1 + 5 \times 1 + 6 \times 1 + 3 \times 1 =$
7. $9 \times 1 + 5 \times 1 + 5 \times 1 + 3 \times 1 =$
8. $6 \times 1 + 7 \times 1 + 4 \times 1 + 5 \times 1 =$
9. $9 \times 1 + 6 \times 1 + 4 \times 1 + 4 \times 1 =$
10. $8 \times 1 + 7 \times 1 + 6 \times 1 + 4 \times 1 =$

$7 \times 9 = 63 \times 1$ (or 63)

11. $3 \times 9 + 2 \times 9 + 1 \times 9 =$
12. $2 \times 9 + 1 \times 9 + 2 \times 9 =$
13. $3 \times 8 + 4 \times 8 + 2 \times 8 =$
14. $2 \times 8 + 2 \times 8 + 2 \times 8 =$
15. $1 \times 8 + 2 \times 8 + 2 \times 8 =$
16. $3 \times 7 + 2 \times 7 + 3 \times 7 =$
17. $2 \times 7 + 2 \times 7 + 4 \times 7 =$
18. $3 \times 6 + 4 \times 6 + 2 \times 6 =$
19. $2 \times 6 + 3 \times 6 + 2 \times 6 =$
20. $4 \times 5 + 1 \times 5 + 3 \times 5 =$

$8 \times 9 = 72 \times 1$ $9 \times 9 =$ $10 \times 9 =$

1. $8 \times 1 + 7 \times 1 =$
2. $6 \times 1 + 7 \times 1 =$
3. $9 \times 1 + 5 \times 1 =$
4. $6 \times 1 + 8 \times 1 =$

5. $13\times1+6\times1=$
6. $9\times1+7\times1=$
7. $12\times1+5\times1=$
8. $8\times1+7\times1=$
9. $17\times1+4\times1=$
10. $16\times1+5\times1=$
11. $15\times1+6\times1=$
12. $14\times1+7\times1=$
13. $13\times1+6\times1=$
14. $18\times1+5\times1=$
15. $9\times1+5\times1=$
16. $16\times1+5\times1=$

LESSON CIV.

A number of examples in concrete numbers are to be given by the children.

1. $3\times3+2\times2=$
2 $7\times3+2\times2=$
3. $8\times1+3\times2=$
4. $7\times3+1\times4=$
5. $4\times3+2\times2=$
6. $5\times2+3\times3=$
7. $2\times4+2\times2=$
8. $7\times1+3\times3=$
9. $4\times4+2\times2=$
10. $3\times4+5\times1=$

1. $13\times1-6\times1=7\times1$
2. $14\times1-8\times1=$
3. $19\times1-7\times1=$
4. $15\times1-8\times1=$
5. $7\times1-3\times1=$
6. $8\times1-5\times1=$
7. $16\times1-8\times1=$
8. $18\times1-9\times1=$
9. $14\times1-10\times1=$
10. $15\times1-5\times1=$

1. $8\times1+6\times1+4\times1+5\times1=$
2. $7\times1+6\times1+5\times1+5\times1=$
3. $9\times1+7\times1+3\times1+4\times1=$

4. $9 \times 1 + 5 \times 1 + 4 \times 1 + 3 \times 1 =$
5. $3 \times 1 + 8 \times 1 + 5 \times 1 + 3 \times 1 =$
6. $8 \times 1 + 6 \times 1 + 4 \times 1 + 4 \times 1 =$
7. $7 \times 1 + 6 \times 1 + 3 \times 1 + 3 \times 1 =$

L=50 XIX= VIII= XXXIV=
LXV= LXXVII= XLII=

LESSON CV.

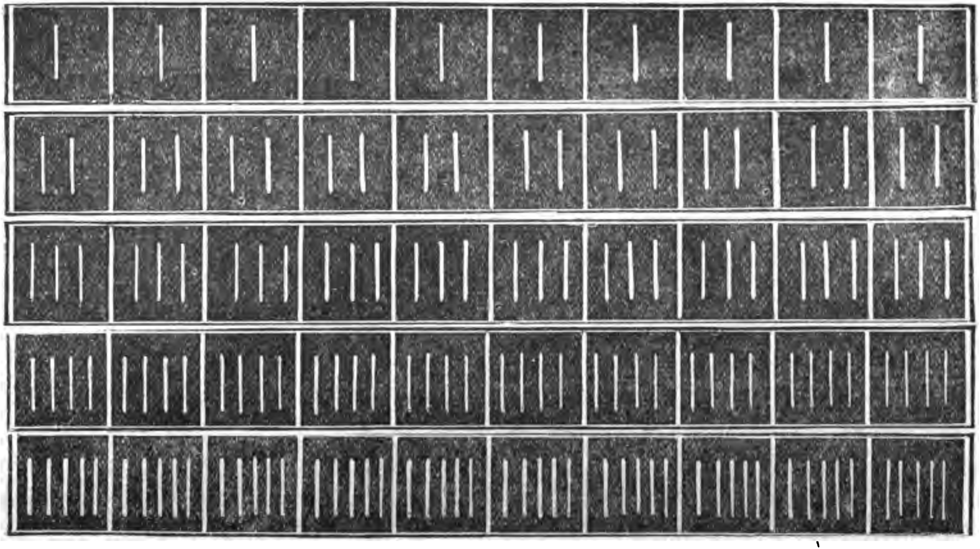
Give ten examples in concrete numbers.

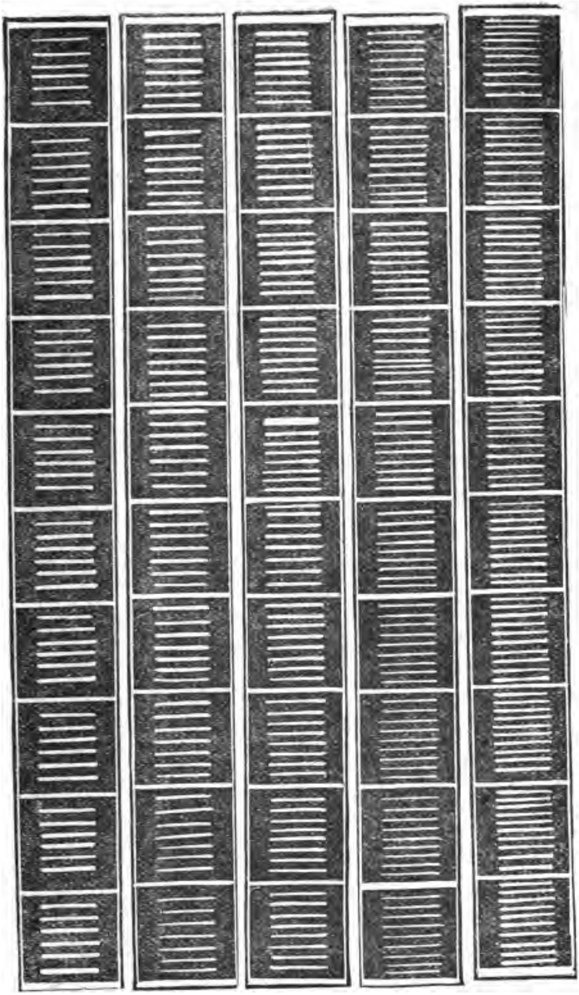
1. $15 \times 1 - 8 \times 1 =$
2. $13 \times 1 - 7 \times 1 =$
3. $19 \times 1 - 6 \times 1 =$
4. $19 \times 1 - 5 \times 1 =$
5. $17 \times 1 - 4 \times 1 =$
6. $8 \times 1 - 3 \times 1 =$
7. $9 \times 1 - 5 \times 1 =$
8. $6 \times 1 - 3 \times 1 =$
9. $14 \times 1 - 6 \times 1 =$
10. $13 \times 1 - 4 \times 1 =$

1. $5 \times 7 + 1 \times 2 = 37 \times 1$
2. $4 \times 3 + 3 \times 1 =$
3. $5 \times 2 + 2 \times 3 =$
4. $2 \times 4 + 2 \times 2 =$
5. $8 \times 2 + 3 \times 3 =$
6. $3 \times 3 + 2 \times 2 =$
7. $6 \times 2 + 4 \times 1 =$
8. $8 \times 2 + 5 \times 1 =$
9. $9 \times 2 + 3 \times 1 =$
10. $7 \times 2 + 2 \times 3 =$

1. $3 \times 6 + 4 \times 6 =$
2. $6 \times 7 + 3 \times 7 =$
3. $5 \times 7 + 3 \times 7 =$
4. $3 \times 8 + 2 \times 8 =$
5. $4 \times 9 + 5 \times 9 =$
6. $3 \times 3 + 6 \times 3 =$
7. $5 \times 4 + 4 \times 4 =$
8. $3 \times 2 + 5 \times 2 =$

ARITHMETICAL CHART COMPLETE.





XXV=25 XXXII= LXI= XLIV=
LIV= XXVII= VII= X=

14=XIV 19= 37=
22= 65= 42=
47= 53= 43=

LESSON CVI.

Give ten examples in concrete numbers.

1. 13×1−4×1=9×1
2. 16×1−5×1=
3. 14×1−7×1=
4. 17×1−5×1=
5. 10×1−6×1=
6. 19×1−6×1=
7. 17×6−4×1=
8. 14×1−8×1=
9. 19×1−3×1=
10. 19×1−6×1=13×1
11. 19×1−6×1=
12. 14×1−8×1=
13. 18×1−9×1=
14. 14×1−7×1=
15. 14×1−4×1=
16. 16×1−8×1=
17. 13×1−7×1=
18. 15×1−6×1=

8	6	9	3	8	6	7	8	9
6	7	5	6	6	6	7	9	6
4	4	4	7	5	6	7	8	3
5	3	5	4	4	6	7	8	7
23								

1×10=10×1 2×10= 3×10=
4×10= 5×10= 6×10=

$7\times10=$ $8\times10=$ $9\times10=$ $10\times10=$

VIII=8 XL= XLIV=

XXII= XXXI= LX=

LIX= LXXXIV= LXXX=

LESSON CVII.

1. $3\times10+4\times10+3\times10=$
2. $2\times10+4\times10+2\times10=$
3. $3\times10+2\times10+1\times10=$
4. $2\times10+2\times10+2\times10=$
5. $3\times9+2\times9+4\times9=$
6. $3\times9+3\times9+3\times9=$
7. $2\times9+3\times9+2\times9=$
8. $2\times9+1\times9+3\times9=$
9. $1\times9+1\times9+2\times9=$
10. $3\times8+2\times8+2\times8=$
11. $2\times8+3\times8+3\times8=$
12. $4\times8+1\times8+5\times8=$
13. $1\times8+3\times8+3\times8=$
14. $2\times8+1\times8+2\times8=$
15. $3\times7+1\times7+3\times7=$
16. $4\times7+2\times7+4\times7=$
17. $4\times7+3\times7+2\times7=$
18. $2\times7+2\times7+2\times7=$

19. $3 \times 7 + 3 \times 7 + 1 \times 7 =$
20. $1 \times 7 + 1 \times 7 + 2 \times 7 =$
21. $3 \times 6 + 2 \times 6 + 3 \times 6 =$
22. $1 \times 6 + 3 \times 6 + 2 \times 6 =$

1. $3 \times 3 + 2 \times 5 =$
2. $9 \times 2 + 3 \times 3 =$
3. $7 \times 2 + 2 \times 3 =$
4. $5 \times 3 + 2 \times 2 =$
5. $2 \times 6 + 3 \times 3 =$
6. $4 \times 2 + 3 \times 1 =$
7. $5 \times 6 + 2 \times 4 =$
8. $4 \times 5 + 3 \times 3 =$
9. $6 \times 3 + 2 \times 2 =$
10. $3 \times 7 + 2 \times 3 =$

1. $13 \times 1 - 7 \times 1 =$
2. $14 \times 1 - 6 \times 1 =$
3. $15 \times 1 - 8 \times 1 =$
4. $16 \times 1 - 5 \times 1 =$
5. $10 \times 1 - 7 \times 1 =$
6. $14 \times 1 - 7 \times 1 =$
7. $18 \times 1 - 9 \times 1 =$
8. $16 \times 1 - 6 \times 1 =$
9. $17 \times 1 - 5 \times 1 =$
10. $16 \times 1 - 8 \times 1 =$

LESSON CVIII.

Oral Work:—

1. $8 \times 1 + 6 \times 1 + 3 \times 1 + 4 \times 1 =$
2. $7 \times 1 + 3 \times 1 + 6 \times 1 + 5 \times 1 =$
3. $9 \times 1 + 6 \times 1 + 5 \times 1 + 4 \times 1 =$
4. $8 \times 1 + 7 \times 1 + 3 \times 1 + 4 \times 1 =$
5. $9 \times 1 + 5 \times 1 + 6 \times 1 + 3 \times 1 =$
6. $10 \times 1 + 7 \times 1 + 4 \times 1 + 5 \times 1 =$

7. $9 \times 1 + 5 \times 1 + 6 \times 1 + 4 \times 1 =$
8. $9 \times 1 + 9 \times 1 + 9 \times 1 + 9 \times 1 =$
9. $8 \times 1 + 4 \times 1 + 5 \times 1 + 7 \times 1 =$
10. $7 \times 1 + 6 \times 1 + 3 \times 1 + 6 \times 1 =$
11. $8 \times 1 + 5 \times 1 + 6 \times 1 + 2 \times 1 =$
12. $7 \times 1 + 5 \times 1 + 5 \times 1 + 4 \times 1 =$
13. $11 \times 1 + 6 \times 1 + 6 \times 1 + 6 \times 1 =$
14. $9 \times 1 + 5 \times 1 + 6 \times 1 + 8 \times 1 =$
15. $10 \times 1 + 4 \times 1 + 5 \times 1 + 7 \times 1 =$
16. $8 \times 1 + 6 \times 1 + 5 \times 1 + 3 \times 1 =$
17. $9 \times 1 + 5 \times 1 + 6 \times 1 + 4 \times 1 =$
18. $11 \times 1 + 4 \times 1 + 5 \times 1 + 6 \times 1 =$
19. $8 \times 1 + 7 \times 1 + 3 \times 1 + 6 \times 1 =$
20. $9 \times 1 + 6 \times 1 + 6 \times 1 + 7 \times 1 =$

1. $15 \times 1 - 8 \times 1 =$
2. $13 \times 1 - 7 \times 1 =$
3. $14 \times 1 - 6 \times 1 =$
4. $19 \times 1 - 7 \times 1 =$
5. $16 \times 1 - 9 \times 1 =$
6. $17 \times 1 - 5 \times 1 =$
7. $14 \times 1 - 7 \times 1 =$
8. $16 \times 1 - 5 \times 1 =$
9. $19 \times 1 - 6 \times 1 =$
10. $14 \times 1 - 10 \times 1 =$
11. $13 \times 1 - 4 \times 1 =$
12. $16 \times 1 - 5 \times 1 =$
13. $9 \times 1 - 5 \times 1 =$
14. $8 \times 1 - 3 \times 1 =$
15. $11 \times 1 - 6 \times 1 =$
16. $12 \times 1 - 7 \times 1 =$
17. $13 \times 1 - 7 \times 1 =$
18. $19 \times 1 - 5 \times 1 =$
19. $4 \times 1 - 1 \times 1 =$
20. $20 \times 1 - 10 \times 1 =$

LESSON CIX.

Give twenty examples in concrete numbers.

1. 10×1+10×1=
2. 9×1+7×1=
3. 13×1+6×1=
4. 11×1+11×1=
5. 16×1+10×1=
6. 17×1+5×1=
7. 13×1+7×1=
8. 8×1+7×1=
9. 9×1+6×1=
10. 6×1+7×1=
11. 8×1+5×1=
12. 9×1+5×1=
13. 4×1+7×1=
14. 12×1+12×1=
15. 6×1+6×1=
16. 9×1+5×1=
17. 13×1+13×1=
18. 14×1+7×1=
19. 16×1+8×1=
20. 14×1+7×1=

1. 6×3+2×2=22
2. 7×3+2×2=
3. 3×6+2×3=
4. 4×5+6×1=
5. 4×2+3×3=
6. 7×2+3×3=
7. 5×3+2×6=
8. 4×4+2×3=
9. 5×5+2×2=
10. 3×7+3×3=

XXIV=24 XLV= LIX=

LXIII= LXXXI= LXXIV=

XXVI= LVII= II=

3	8	9	4	3	4	9	3
7	4	3	5	7	7	3	7
6	5	7	6	6	6	6	7
5	7	4	5	5	5	4	5
21							

LESSON CX.

1. $3 \times 1 + 7 \times 1 + 6 \times 1 + 5 \times 1 =$
2. $8 \times 1 + 7 \times 1 + 6 \times 1 + 6 \times 1 =$
3. $7 \times 1 + 6 \times 1 + 6 \times 1 + 5 \times 1 =$
4. $6 \times 1 + 8 \times 1 + 5 \times 1 + 7 \times 1 =$
5. $7 \times 1 + 6 \times 1 + 4 \times 1 + 7 \times 1 =$
6. $10 \times 1 + 3 \times 1 + 6 \times 1 + 4 \times 1 =$
7 $8 \times 1 + 4 \times 1 + 7 \times 1 + 5 \times 1 =$
8. $7 \times 1 + 7 \times 1 + 7 \times 1 + 7 \times 1 =$
9 $8 \times 1 + 9 \times 1 + 4 \times 1 + 5 \times 1 =$
10. $9 \times 1 + 6 \times 1 + 4 \times 1 + 3 \times 1 =$
11. $7 \times 1 + 8 \times 1 + 6 \times 1 + 4 \times 1 =$
12. $6 \times 1 + 7 \times 1 + 5 \times 1 + 4 \times 1 =$
13 $3 \times 1 + 6 \times 1 + 4 \times 1 + 4 \times 1 =$
14. $7 \times 1 + 4 \times 1 + 6 \times 1 + 3 \times 1 =$
15 $10 \times 1 + 10 \times 1 + 10 \times 1 + 7 \times 1 =$
16 $8 \times 1 + 6 \times 1 + 4 \times 1 + 3 \times 1 =$
17. $7 \times 1 + 4 \times 1 + 5 \times 1 + 4 \times 1 =$
18. $8 \times 1 + 8 \times 1 + 8 \times 1 + 8 \times 1 =$
19 $3 \times 1 + 7 \times 1 + 6 \times 1 + 5 \times 1 =$
20. $7 \times 1 + 8 \times 1 + 5 \times 1 + 6 \times 1 =$

9	8	7	8	7	9
6	7	4	5	5	6
5	6	5	4	4	5
4	5	6	8	3	4

8	9	8	8	8	7
4	7	9	11	10	3
3	5	5	4	6	2
7	6	6	7	5	5

8×7=
10×10=
7×6=
5×4=
7×3=
6×6=
5×7=
4×8=
9×5=
6×3=
7×5=
9×6=
8×10=
3×6=

LESSON CXI.

Part 1: The pupils are taught to count and to make numbers from 101 to 150 inclusive, and to know the corresponding ordinals.

Part 2:—

10×9=
9×9=
8×9=
7×9=
6×9=
5×9=
4×9=
3×9=
2×9=

8×9=
7×6=
5×7=
6×8=
7×4=
8×5=
10×3=
6×2=
2×3=

8×8=
7×7=
6×6=
4×4=
5×5=
9×4=
8×5=
7×3=
2×2=

$1\times11=11\times1$
$2\times11=$
$3\times11=$
$4\times11=$
$5\times11=$
$6\times11=$
$7\times11=$
$8\times11=$
$9\times11=$
$10\times11=$
$11\times11=$

1. $6\times3+2\times5=$
2. $7\times7+2\times3=$
3 $3\times6+2\times2=$
4 $2\times5+3\times3=$
5 $7\times4+2\times3=$
6. $3\times5+4\times2=$
7. $4\times5+3\times2=$
8. $6\times6+2\times4=$
9. $3\times7+4\times2=$

1 $15\times1-8\times1=$
2 $16\times1-8\times1=$
3 $13\times1-7\times1=$
4. $14\times1-6\times1=$
5. $17\times1-5\times1=$
6. $14\times1-7\times1=$
7. $15\times1-6\times1=$
8. $17\times1-15\times1=$
9. $20\times1-10\times1=$
10. $13\times1-5\times1=$

LX=60
LXXIX=
XC=
LXIV=
LXXX=
XCIV=
LXXII=
LXXXVI=

LESSON CXII.

1. $8\times1+4\times1+5\times1+7\times1=$
2. $9\times1+5\times1+6\times1+7\times1=$
3. $7\times1+6\times1+5\times1+5\times1=$
4. $9\times1+5\times1+7\times1+6\times1=$

5. $10 \times 1 + 6 \times 1 + 5 \times 1 + 7 \times 1 =$

6. $8 \times 1 + 7 \times 1 + 6 \times 1 + 8 \times 1 =$

7. $9 \times 1 + 7 \times 1 + 5 \times 1 + 6 \times 1 =$

8. $7 \times 1 + 11 \times 1 + 4 \times 1 + 5 \times 1 =$

9. $11 \times 1 + 5 \times 1 + 7 \times 1 + 4 \times 1 =$

10. $8 \times 1 + 6 \times 1 + 6 \times 1 + 9 \times 1 =$

11. $9 \times 1 + 7 \times 1 + 5 \times 1 + 4 \times 1 =$

12. $8 \times 1 + 6 \times 1 + 3 \times 1 + 5 \times 1 =$

13. $8 \times 1 + 5 \times 1 + 3 \times 1 + 6 \times 1 =$

14. $9 \times 1 + 6 \times 1 + 4 \times 1 + 3 \times 1 =$

15. $8 \times 1 + 8 \times 1 + 7 \times 1 + 4 \times 1 =$

16. $7 \times 1 + 7 \times 1 + 8 \times 1 + 5 \times 1 =$

17. $9 \times 1 + 6 \times 1 + 3 \times 1 + 6 \times 1 =$

18. $5 \times 1 + 7 \times 1 + 6 \times 1 + 5 \times 1 =$

19. $8 \times 1 + 8 \times 1 + 8 \times 1 + 4 \times 1 =$

20. $7 \times 1 + 6 \times 1 + 4 \times 1 + 7 \times 1 =$

$7 \times 8 =$
$8 \times 3 =$
$6 \times 10 =$
$6 \times 5 =$
$8 \times 10 =$
$8 \times 2 =$
$7 \times 5 =$

$9 \times 5 =$
$7 \times 6 =$
$8 \times 4 =$
$8 \times 9 =$
$2 \times 3 =$
$9 \times 9 =$
$2 \times 10 =$

$10 \times 10 =$
$4 \times 11 =$
$3 \times 7 =$
$7 \times 11 =$
$7 \times 7 =$
$8 \times 8 =$
$3 \times 3 =$

LESSON CXIII.

1. 8×1+7×1=
2. 9×1+6×1=
3. 7×1+9×1=
4 8×1+6×1=
5. 9×1+5×1=
6 10×1+7×1=
7. 9×1+7×1=
8. 6×1+7×1=
9. 8×1+5×1=
10 4×1+5×1=
11. 11×1+11×1=
12 8×1+9×1=
13. 12×1+10×1=
14. 13×1+12×1=
15 9×1+4×1=
16 8×1+5×1=
17 14×1+14×1=
18 13×1+13×1=
19. 7×1+5×1=
20 3×1+6×1=

1 8×1−5×1=
2 15×1−8×1=
3 13×1−7×1=
4. 16×1−8×1=
5. 14×1−8×1=
6 17×1−5×1=
7. 16×1−9×1=
8. 19×1−9×1=
9 20×1−7×1=
10. 17×1−5×1=
11. 19×1−5×1=
12 19×1−7×1=
13. 16×1−5×1=
14. 17×1−4×1=
15. 16×1−3×1=
16. 7×1−3×1=
17. 9×1−5×1=
18 10×1−7×1=
19. 12×1−5×1=
20. 13×1−9×1=

11×11=   8×9=   7×6=

5×5=   4×4=   5×5=

$6\times6=$

$2\times2=$

$10\times9=$

$9\times11=$

$8\times4=$

$9\times7=$

$4\times5=$

$11\times7=$

$8\times8=$

$6\times1=$

$8\times5=$

$8\times7=$

$7\times7=$

$7\times7=$

$3\times3=$

$11\times3=$

$9\times6=$

$4\times4=$

$9\times4=$

$3\times6=$

$10\times8=$

$8\times5=$

$6\times3=$

$4\times2=$

$1\times12=12\times1$ $\quad 2\times12=$ $\quad 3\times12=$

LESSON CXIV.

Ten examples in concrete numbers given by pupils.

1. $8\times3+4\times2=$
2. $3\times3+2\times2=$
3. $7\times4+5\times1=$
4. $6\times6+5\times2=$
5. $6\times7+2\times3=$
6. $3\times6+2\times4=$
7. $9\times4+3\times3=$
8. $9\times4+3\times2=$
9. $10\times3+3\times3=$
10. $9\times3+2\times2=$
11. $8\times4+3\times5=$
12. $3\times12+8\times1=$
13. $9\times4+9\times1=$
14. $8\times5+5\times4=$
15. $3\times7+4\times3=$
16. $8\times6+4\times2=$
17. $9\times2+2\times5=$
18. $4\times4+3\times3=$
19. $3\times8+4\times2=$
20. $8\times4+2\times3=$

1. $3\times11+4\times11+4\times11=$

2. $2 \times 11 + 3 \times 11 + 2 \times 11 =$
3. $7 \times 11 + 1 \times 11 + 1 \times 11 =$
4. $5 \times 11 + 2 \times 11 + 1 \times 11 =$
5. $3 \times 10 + 4 \times 10 + 1 \times 10 =$
6. $7 \times 10 + 1 \times 10 + 1 \times 10 =$
7. $3 \times 9 + 3 \times 9 + 3 \times 9 =$
8. $2 \times 9 + 3 \times 9 + 3 \times 9 =$
9. $1 \times 9 + 2 \times 9 + 3 \times 9 =$
10. $3 \times 8 + 3 \times 8 + 4 \times 8 =$
11. $5 \times 8 + 2 \times 8 + 2 \times 8 =$
12. $3 \times 8 + 1 \times 8 + 1 \times 8 =$
13. $2 \times 7 + 2 \times 7 + 3 \times 7 =$
14. $3 \times 7 + 1 \times 7 + 2 \times 7 =$
15. $2 \times 7 + 2 \times 7 + 2 \times 7 =$
16. $3 \times 7 + 1 \times 7 + 1 \times 7 =$
17. $1 \times 6 + 4 \times 6 + 3 \times 6 =$
18. $3 \times 6 + 2 \times 6 + 2 \times 6 =$
19. $2 \times 5 + 3 \times 5 + 3 \times 5 =$
20. $1 \times 5 + 2 \times 5 + 3 \times 5 =$

$4 \times 12 =$ $5 \times 12 =$

LESSON CXV.

Give twenty examples in concrete numbers.

1. $3 \times 7 + 2 \times 2 =$ 2. $4 \times 8 + 2 \times 3 =$

3. $4\times7+3\times3=$
4. $5\times6+3\times3=$
5. $9\times4+2\times5=$
6. $8\times4+7\times2=$
7. $4\times4+2\times2=$
8. $7\times6+3\times3=$
9. $4\times8+3\times1=$
10. $3\times8+4\times3=$
11. $6\times6+7\times1=$
12. $8\times4+6\times1=$
13. $3\times7+2\times5=$
14. $6\times4+7\times2=$
15. $7\times7+3\times4=$
16. $6\times3+4\times2=$
17. $4\times5+3\times4=$
18. $3\times7+2\times5=$
19. $6\times7+2\times4=$
20. $5\times5+2\times3=$

8	9	11	6	9	10	12	9
6	5	7	8	4	7	9	6
5	3	6	5	6	6	7	5
4	2	5	3	3	3	2	6

$3\times11=$

$8\times3=$

$3\times10=$

$6\times6=$

$2\times4=$

$6\times8=$

$4\times7=$

$4\times11=$

$9\times9=$

$8\times1=$

$7\times4=$

$8\times3=$

$8\times10=$

$3\times3=$

$7\times7=$

$6\times6=$

$7\times9=$

$4\times12=$

$8\times2=$

$4\times2=$

16=XVI 19= 27= 7= 36= 75=

83= 79= 63= 54= 42= 52=

LXXXIX=89 XCIV= XCI=

LXX= LXXII= LXVI=

LVIII= X= XVI=

XXIV= XXX=

LESSON CXVI.

1 $8 \times 1 + 7 \times 1 + 6 \times 1 + 3 \times 1 =$

2. $7 \times 1 + 6 \times 1 + 7 \times 1 + 5 \times 1 =$

3. $9 \times 1 + 5 \times 1 + 6 \times 1 + 4 \times 1 =$

4. $11 \times 1 + 7 \times 1 + 6 \times 1 + 5 \times 1 =$

5 $8 \times 1 + 7 \times 1 + 4 \times 1 + 8 \times 1 =$

6. $7 \times 1 + 7 \times 1 + 7 \times 1 + 7 \times 1 =$

7. $9 \times 1 + 9 \times 1 + 9 \times 1 + 3 \times 1 =$

8. $3 \times 1 + 9 \times 1 + 7 \times 1 + 4 \times 1 =$

9 $9 \times 1 + 5 \times 1 + 3 \times 1 + 7 \times 1 =$

10 $8 \times 1 + 7 \times 1 + 6 \times 1 + 3 \times 1 =$

11 $11 \times 1 + 5 \times 1 + 6 \times 1 + 3 \times 1 =$

12 $9 \times 1 + 6 \times 1 + 7 \times 1 + 4 \times 1 =$

13. $7 \times 1 + 6 \times 1 + 5 \times 1 + 4 \times 1 =$

14 $11 \times 1 + 11 \times 1 + 11 \times 1 + 4 \times 1 =$

15. $15 \times 1 + 7 \times 1 + 4 \times 1 + 5 \times 1 =$

16 $9 \times 1 + 9 \times 1 + 6 \times 1 + 3 \times 1 =$

17. $8 \times 1 + 7 \times 1 + 5 \times 1 + 4 \times 1 =$

18. $7 \times 1 + 7 \times 1 + 6 \times 1 + 5 \times 1 =$

19. $8 \times 1 + 5 \times 1 + 6 \times 1 + 5 \times 1 =$

20. $9 \times 1 + 6 \times 1 + 5 \times 1 + 3 \times 1 =$

$6 \times 12 =$ $7 \times 12 =$

1. $15 \times 1 - 8 \times 1 =$ 2. $13 \times 1 - 6 \times 1 =$

3. $14\times1-8\times1=$
4 $19\times1-6\times1=$
5 $15\times1-6\times1=$
6. $13\times1-9\times1=$
7 $8\times1-3\times1=$
8 $16\times1-9\times1=$
9. $17\times1-8\times1=$
10. $19\times1-6\times1=$
11. $13\times1-6\times1=$
12 $15\times1-9\times1=$
13 $18\times1-5\times1=$
14 $17\times1-4\times1=$
15 $16\times1-5\times1=$
16 $20\times1-7\times1=$

LELSON CXVII.

1 $3\times11+4\times11+3\times11=$
2 $2\times11+3\times11+2\times11=$
3 $3\times11+1\times11+2\times11=$
4 $4\times11+2\times11+3\times11=$
5 $3\times10+2\times10+5\times10=$
6 $3\times10+2\times10+2\times10=$
7. $2\times10+2\times10+2\times10=$
8. $3\times9+5\times9+1\times9=$
9. $2\times9+2\times9+3\times9=$
10. $5\times9+2\times9+3\times9=$
11. $4\times8+4\times8+3\times8=$
12. $2\times8+1\times8+3\times8=$
13. $2\times8+2\times8+2\times8=$
14. $1\times8+1\times8+1\times8=$
15. $2\times7+3\times7+2\times7=$

16. $1 \times 7 + 4 \times 7 + 3 \times 7 =$
17. $2 \times 6 + 3 \times 6 + 3 \times 6 =$
18. $3 \times 6 + 2 \times 6 + 1 \times 6 =$
19. $3 \times 5 + 3 \times 5 + 3 \times 5 =$
20. $3 \times 4 + 2 \times 4 + 4 \times 4 =$

1. $3 \times 3 + 4 \times 1 =$
2. $4 \times 3 + 2 \times 2 =$
3. $3 \times 6 + 4 \times 1 =$
4. $6 \times 2 + 3 \times 3 =$
5. $8 \times 2 + 5 \times 1 =$
6. $9 \times 2 + 6 \times 1 =$
7. $5 \times 4 + 3 \times 3 =$
8. $6 \times 4 + 5 \times 3 =$
9. $3 \times 7 + 4 \times 2 =$
10. $4 \times 5 + 3 \times 4 =$

LX=60 LXXXVI= XCIX=
XVIII= XXXIV= XLV=
XXII= XXXIII=
LIV= LXIX=

17= 19= 75= 67=
93= 87= 54= 13=
9= 3=

LESSON CXVIII.

1. $8 \times 1 + 6 \times 1 + 5 \times 1 + 5 \times 1 =$
2. $7 \times 1 + 6 \times 1 + 6 \times 1 + 6 \times 1 =$
3. $8 \times 1 + 7 \times 1 + 6 \times 1 + 5 \times 1 =$
4. $9 \times 1 + 7 \times 1 + 7 \times 1 + 4 \times 1 =$

5. $11 \times 1 + 6 \times 1 + 4 \times 1 + 6 \times 1 =$
6. $12 \times 1 + 5 \times 1 + 6 \times 1 + 7 \times 1 =$
7. $8 \times 1 + 5 \times 1 + 7 \times 1 + 10 \times 1 =$
8. $11 \times 1 + 6 \times 1 + 6 \times 1 + 6 \times 1 =$
9. $12 \times 1 + 3 \times 1 + 7 \times 1 + 9 \times 1 =$
10. $8 \times 1 + 4 \times 1 + 7 \times 1 + 8 \times 1 =$
11. $9 \times 1 + 6 \times 1 + 7 \times 1 + 7 \times 1 =$
12. $8 \times 1 + 7 \times 1 + 5 \times 1 + 11 \times 1 =$
13. $9 \times 1 + 7 \times 1 + 6 \times 1 + 8 \times 1 =$
14. $9 \times 1 + 8 \times 1 + 5 \times 1 + 5 \times 1 =$
15. $7 \times 1 + 4 \times 1 + 8 \times 1 + 7 \times 1 =$
16. $11 \times 1 + 8 \times 1 + 7 \times 1 + 5 \times 1 =$
17. $4 \times 1 + 9 \times 1 + 6 \times 1 + 7 \times 1 =$
18. $3 \times 1 + 9 \times 1 + 7 \times 1 + 5 \times 1 =$
19. $8 \times 1 + 7 \times 1 + 7 \times 1 + 5 \times 1 =$
20. $10 \times 1 + 7 \times 1 + 7 \times 1 + 6 \times 1 =$
21. $9 \times 1 + 8 \times 1 + 7 \times 1 + 5 \times 1 =$
22. $8 \times 1 + 8 \times 1 + 8 \times 1 + 8 \times 1 =$
23. $9 \times 1 + 9 \times 1 + 9 \times 1 + 9 \times 1 =$

$8 \times 12 =$ $9 \times 12 =$

1. $15 \times 1 - 8 \times 1 =$
2. $14 \times 1 - 6 \times 1 =$
3. $17 \times 1 - 4 \times 1 =$
4. $20 \times 1 - 6 \times 1 =$
5. $13 \times 1 - 7 \times 1 =$
6. $19 \times 1 - 5 \times 1 =$
7. $17 \times 1 - 6 \times 1 =$
8. $14 \times 1 - 7 \times 1 =$

9. $19\times1-4\times1=$

10. $20\times1-7\times1=$

$8\times9=$
$7\times6=$
$8\times5=$
$9\times4=$
$3\times8=$
$7\times7=$

$8\times3=$
$10\times4=$
$8\times6=$
$9\times5=$
$10\times9=$
$3\times11=$

$4\times8=$
$3\times3=$
$8\times7=$
$9\times3=$
$11\times10=$
$9\times9=$

LESSON CXIX.

1. $10\times2-6\times2=4\times2=8\times1$
2. $15\times3-8\times3=7\times3=21\times1$
3. $16\times3-8\times3=$
4. $19\times4-9\times4=$
5. $16\times5-7\times5=$
6. $18\times4-9\times4=$
7. $17\times4-9\times4=$
8. $15\times5-6\times5=$
9. $11\times6-5\times6=$
10. $12\times9-6\times9=$
11. $8\times8-3\times8=$
12. $9\times7-4\times7=$
13. $13\times8-7\times8=$
14. $16\times9-7\times9=$
15. $15\times10-8\times10=$
16. $14\times11-8\times11=$
17. $7\times12-3\times12=$

$10\times12=120\times1$

$11\times12=$

1. $8\times1+8\times1+9\times1+7\times1=$
2. $8\times1+7\times1+7\times1+10\times1=$
3. $7\times1+11\times1+8\times1+6\times1=$

4. $14 \times 1 + 6 \times 1 + 8 \times 1 + 3 \times 1 =$
5. $7 \times 1 + 8 \times 1 + 9 \times 1 + 7 \times 1 =$
6. $11 \times 1 + 7 \times 1 + 6 \times 1 + 6 \times 1 =$
7. $12 \times 1 + 3 \times 1 + 8 \times 1 + 7 \times 1 =$
8. $13 \times 1 + 5 \times 1 + 6 \times 1 + 4 \times 1 =$
9. $9 \times 1 + 8 \times 1 + 7 \times 1 + 5 \times 1 =$
10. $7 \times 1 + 6 \times 1 + 8 \times 1 + 6 \times 1 =$
11. $9 \times 1 + 6 \times 1 + 5 \times 1 + 8 \times 1 =$
12. $11 \times 1 + 11 \times 1 + 11 \times 1 + 6 \times 1 =$
13. $13 \times 1 + 13 \times 1 + 7 \times 1 + 4 \times 1 =$
14. $15 \times 1 + 15 \times 1 + 7 \times 1 + 4 \times 1 =$
15. $13 \times 1 + 10 \times 1 + 4 \times 1 + 8 \times 1 =$
16. $7 \times 1 + 6 \times 1 + 8 \times 1 + 7 \times 1 =$

LESSON CXX.

1. $8 \times 7 + 6 \times 4 =$
2. $3 \times 9 + 10 \times 1 =$
3. $9 \times 4 + 7 \times 2 =$
4. $8 \times 3 + 8 \times 1 =$
5. $7 \times 4 + 11 \times 1 =$
6. $9 \times 7 + 8 \times 2 =$
7. $7 \times 7 + 10 \times 2 =$
8. $8 \times 8 + 4 \times 4 =$
9. $7 \times 5 + 4 \times 4 =$
10. $8 \times 5 + 6 \times 3 =$
11. $9 \times 5 + 6 \times 1 =$
12. $8 \times 8 + 7 \times 2 =$
13. $7 \times 6 + 4 \times 3 =$
14. $8 \times 5 + 7 \times 3 =$
15. $6 \times 6 + 5 \times 4 =$
16. $7 \times 7 + 10 \times 2 =$
17. $9 \times 4 + 3 \times 8 =$
18. $7 \times 5 + 4 \times 3 =$
19. $6 \times 6 + 5 \times 2 =$
20. $8 \times 5 + 4 \times 3 =$

21. $11\times3+2\times8=$
22. $7\times4+5\times5=$
23. $3\times7+4\times2=$
24. $8\times5+3\times3=$
25. $7\times6+4\times4=$

$12\times12=$

1. $15\times1-8\times1=$
2. $17\times1-6\times1=$
3. $19\times1-7\times1=$
4. $14\times1-6\times1=$
5. $13\times1-6\times1=$
6. $15\times1-6\times1=$
7. $19\times1-7\times1=$
8. $15\times1-6\times1=$
9. $11\times1-5\times1=$
10. $17\times1-5\times1=$
11. $18\times4-5\times4=$
12. $17\times3-4\times3=$
13. $19\times2-9\times2=$
14. $15\times7-8\times7=$
15. $13\times9-6\times9=$
16. $19\times4-10\times4=$
17. $15\times6-6\times6=$
18. $13\times7-7\times7=$
19. $11\times7-5\times1=$
20. $14\times4-7\times4=$
21. $15\times4-6\times4=$
22. $16\times3-9\times3=$

$12\times12=144\times1$ (or 144)
$11\times12=$
$10\times12=$
$9\times12=$
$8\times12=$
$7\times12=$
$6\times12=$
$5\times12=$
$4\times12=$
$3\times12=$
$2\times12=$

LESSON CXXI.

1. $10\times10+3\times7=$
2. $12\times4+7\times2=$
3. $8\times9+7\times3=$
4. $7\times6+4\times4=$
5. $8\times5+6\times3=$
6. $9\times5+4\times3=$

7. $5\times7+6\times5=$
8. $8\times6+3\times4=$
9. $12\times4+7\times3=$
10. $8\times8+5\times3=$
11. $9\times3+7\times2=$
12. $8\times8+12\times1=$
13. $7\times6+13\times1=$
14. $9\times5+4\times4=$
15. $3\times8+5\times4=$
16. $11\times11+7\times3=$
17. $6\times8+7\times1=$
18. $8\times9+4\times3=$
19. $7\times7+10\times2=$
20. $3\times7+6\times2=$
21. $11\times4+7\times1=$

1. $19\times1-8\times1=$
2. $15\times1-7\times1=$
3. $13\times1-6\times1=$
4. $18\times1-4\times1=$
5. $17\times1-3\times1=$
6. $16\times1-8\times1=$
7. $18\times1-9\times1=$
8. $17\times1-9\times1=$
9. $18\times1-5\times1=$
10. $13\times1-7\times1=$
11. $16\times1-11\times1=$
12. $13\times1-9\times1=$
13. $14\times1-8\times1=$
14. $17\times1-6\times1=$
15. $15\times1-6\times1=$
16. $18\times1-4\times1=$
17. $22\times1-7\times1=$
18. $25\times1-9\times1=$
19. $18\times1-10\times1=$
20. $17\times1-5\times1=$
21. $19\times1-6\times1=$

XXIV=24
IV=
LXXX=
LIX=
XCII=
XLV=
LXII=
LXIV=
LX=
XCVII=
XIX=
LXIII=
LXXXI=
XC=
C=

LESSON CXXII.

1. $8\times7+6\times6=$
2. $7\times7+3\times3=$
3. $4\times8+2\times5=$
4. $6\times8+4\times4=$
5. $9\times5+2\times6=$
6. $4\times9+5\times3=$
7. $9\times5+3\times8=$
8. $8\times8+3\times7=$
9. $6\times6+4\times7=$
10. $9\times9+11\times1=$
11. $11\times4+10\times1=$
12. $8\times6+3\times7=$
13. $8\times5+5\times4=$
14. $9\times6+6\times4=$
15. $11\times4+7\times3=$
16. $8\times5+4\times3=$
17. $8\times6+11\times4=$
18. $9\times6+10\times1=$
19. $8\times5+6\times6=$
20. $7\times3+4\times4=$

1. $9\times1+7\times1=$
2 $8\times1+11\times1=$
3. $12\times1+9\times1=$
4. $8\times1+7\times1=$
5. $6\times1+8\times1=$
6. $7\times1+4\times1=$
7. $4\times1+9\times1=$
8. $11\times1+12\times1=$
9. $13\times1+9\times1=$
10. $6\times1+7\times1=$
11. $8\times1+6\times1=$
12. $7\times1+7\times1=$
13. $12\times1+12\times1=$
14. $13\times1+6\times1=$
15. $8\times1+8\times1=$
16. $6\times1+12\times1=$
17. $7\times1+13\times1=$
18. $14\times1+9\times1=$
19. $13\times1+11\times1=$
20. $14\times1+9\times1=$

14=XIV 19= 75= 13= 47=

65= 93= 54= 9= 17=

67= 41= 86= 96= 83=

LESSON CXXIII.

8	7	9	3	6	8
6	6	5	6	8	5
5	5	4	7	7	4
4	4	6	4	4	5
3	2	5	3	5	6

3	11	14	11	13	14
8	6	7	11	4	4
7	7	6	11	7	6
6	5	3	4	8	3
10	4	2	5	3	7

1. $8\times8+3\times2=$

2. $9\times8+3\times2=$

3 $8\times8+3\times6=$

4 $4\times7+5\times5=$

5. $8\times7+3\times5=$

6 $6\times6+4\times4=$

7. $9\times8+5\times2=$

8 $7\times4+2\times2=$

9. $3\times7+4\times5=$

10. $3\times8+5\times2=$

11. $3\times8+4\times2=$

12. $11\times7+4\times4=$

13. $6\times8+4\times5=$

14. $9\times6+3\times4=$

15. $7\times7+12\times1=$

16. $13\times1+7\times2=$

1. $13\times12-6\times12=7\times12=84\times1$

2. $15\times12-8\times12=$

3. $19\times11-10\times11=$

4. $13\times11-5\times11=$

5. $15\times11-5\times11=$

6. $16\times10-8\times10=$

7. $19\times10-10\times10=$

8. $20\times12-10\times12=$

9. $17\times9-7\times9=$

10. $19\times9-10\times9=$
11. $17\times8-9\times8=$
12. $19\times4-10\times4=$
13. $15\times7-8\times7=$
14. $14\times8-9\times8=$
15. $16\times6-14\times6=$
16. $13\times5-8\times5=$

LESSON CXXIV.

1. $8\times8+7\times2=$
2. $7\times6+5\times5=$
3. $11\times7+4\times4=$
4. $8\times8+5\times4=$
5. $7\times6+3\times3=$
6. $9\times5+4\times4=$
7. $8\times6+6\times2=$
8. $6\times7+11\times1=$
9. $8\times9+12\times1=$
10. $7\times5+2\times8=$
11. $4\times9+13\times1=$
12. $7\times11+14\times1=$
13. $9\times9+2\times3=$
14. $10\times7+4\times2=$
15. $8\times6+2\times7=$
16. $11\times11+6\times3=$
17. $12\times6+4\times4=$
18. $7\times8+3\times3=$
19. $8\times5+5\times4=$

1. $13\times1-7\times1=$
2. $16\times1-9\times1=$
3. $13\times1-6\times1=$
4. $15\times1-8\times1=$
5. $19\times1-7\times1=$
6. $17\times1-8\times1=$
7. $19\times1-9\times1=$
8. $16\times1-9\times1=$
9. $20\times1-7\times1=$
10. $14\times1-8\times1=$
11. $17\times1-5\times1=$
12. $13\times1-9\times1=$
13. $15\times1-6\times1=$
14. $20\times1-9\times1=$
15. $8\times1-5\times1=$
16. $7\times1-4\times1=$

17. $13\times1-5\times1=$

18. $12\times1-8\times1=$

19. $13\times1-9\times1=$

20. $12\times12+4\times4=$

73=LXXIII 95= 72= 55=
87= 14= 7= 19=
34= 70= 100= 44=
38= 91= 86= 98=

NOTE: If pupils should be able to do more work before the school-year closes, the teacher may (1) extemporize additional examples for the class; and (2) she may exercise the children by requiring them to make examples in concrete numbers.

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6. They subtract one number from another when neither number exceeds 20.

7. They make practical use of the signs +, ×, =, and –.

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I—ndependence.
B—urgoyne's Surrender.
E—vacuation.
R—etribution.
T—reason.
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